

Whirlpool Turbine - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Whirlpool Turbine Market size is estimated at USD 121.32 million in 2025, and is expected to reach USD 180.91 million by 2030, at a CAGR of 8.32% during the forecast period (2025-2030).

Key Highlights

- Over the long term, the rising demand for clean energy projects and the growth and adoption of new and less finance-intensive renewable energy technology are expected to drive the whirlpool turbine market during the forecast period.
- On the other hand, challenges like low flow conditions, silt, and debris accumulation will restrain the whirlpool turbine market during the forecast period.
- However, the immense energy potential of water flow in rivers, canals, lakes, and oceans provides a huge opportunity for whirlpool turbine manufacturing companies and associated infrastructure construction companies.
- Asia-Pacific will dominate the market due to huge river potential and emerging technology adaptations.

Whirlpool Turbine Market Trends

The Off-grid Residential Application Segment to Dominate the Market

- In today's environment, where a majority of countries are vigorously pushing for the adoption of clean, carbon-free emitting energy sources, considering the intermittency of wind and solar production and investments, hydropower is an attractive and intriguing solution to supply energy, despite their not many types of viable technologies for low-head hydropower.

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- With the rising population and expansion of cities and small towns, the demand for electricity has also risen. According to Energy Institute Statistical Review of World Energy 2024 data, the global electricity consumption in 2023 reached 29,924.75 terawatt-hours, rising by 2.5% from 29,188.08 terawatt-hours of electricity generation in 2022, thus citing a huge potential for the growth of the whirlpool turbine market in the off-grid segment.
- When installed in remote or mountainous areas, small-scale whirlpool vortex turbines offer an excellent option for off-grid electricity generation by harnessing surface run-off water, previously untapped. These small-scale vortex turbines are easy to install and require less capital investment of resources and time, thus providing a perfect future small-scale hydroelectric power source in remote areas with less capital inputs.
- Many companies are now working in the whirlpool turbine market, bringing clean and affordable electricity to remote locations using hydropower plants and helping the locals learn how to maintain and use the whirlpool turbines. The design team utilizes natural streams to power their project, creating a curving construction that allows the water to spin continuously.
- The residents can now harness clean energy from rivers and canals, previously thought impossible. The micro-vortex whirlpool turbines can power communities, cities, and villages with 50 to 500 households, generating around 120,000 to 560,000 kWh per year turbine, thus providing an excellent option for off-grid electricity generation.
- These turbine systems offer several benefits, including continuous electricity generation without the need for large water-holding reservoirs or altering the course of the river. They have minimal to no environmental impact, especially when generating electricity for off-grid residential small-scale segments.
- In 2023, Turbulent Hydro, a Belgian company specializing in the development and installation of whirlpool turbines, announced the development of several projects in Europe. These projects include a 60 kW project in Azores, Portugal, a 5 kW project in Sobral Pichorro, Portugal, off-grid residential projects such as a 7.5 kW project in Denver, United Kingdom, and a 5.5 kW vortex turbine project for a private house in Otepaa, Estonia.
- Thus, the aforementioned points show that the off-grid segment will dominate the whirlpool turbine market.

Asia-Pacific to Witness Significant Growth

- Asia-Pacific is expected to dominate the market due to rapid industrialization, increasing electricity consumption due to growing urbanization, and the focus of the respective governments on increasing the share of renewables in their energy share.
- In previous decades, the majority of the electricity share in Asia-Pacific countries has been driven by hydro energy. According to International Renewable Energy Agency 2024 data, India's hydro energy installed capacity rose from 52,005 MW in 2022 to 52,117 MW in 2023. Meanwhile, in Indonesia, the capacity grew from 6,689 MW in 2022 to 6,784 MW in 2023. These statistics clearly show a huge opportunity for the whirlpool turbine market players.
- The Asian-Pacific countries have the maximum number of rivers, substantial coastal landscapes, and a much-required river water gradient. Thus, with such geographical advantages, Asia-Pacific boasts a huge potential in the whirlpool turbine market.
- China abounds in rivers totaling 220,000 km in length. There are over 1,500 rivers, each with an over 1,000 square km drainage area. The top 10 major rivers in India occupy a height of over 35,000 km. Apart from the major rivers, both Asian and Southeast Asian countries contain numerous small rivers and rivulet systems, which can provide an infinitely renewable energy potential to the whirlpool turbine market with zero emissions and a minimum amount of investment compared to traditional hydroelectric dams.
- Even smaller countries in the island nations like Indonesia, Taiwan, and the Philippines have also shown interest in the emerging whirlpool turbine vortex technology due to their active and perennial river water systems, thus helping them to avoid the repercussions of large-scale hydroelectric dam projects.
- In 2023, Turbulent Hydro announced ongoing projects that provided whirlpool turbines and associated technologies to small-scale hydro vortex dams and the 140 kW Rural Electrification project in Mindanao, Philippines.
- In late 2022, Turbulent Hydro completed a 13 KW grid-connected whirlpool turbines and associated technologies project for providing electricity to Green School, located next to the Ayung River in Bali, Indonesia.

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- Thus, with the rising installations of whirlpool turbines in villages, small towns, and towns near canals and rivers, the region is expected to grow significantly during the forecast period.

Whirlpool Turbine Industry Overview

The whirlpool turbine market is semi-consolidated. Some of the major players in the market (in no particular order) include Suneco Hydro, Turbulent Hydro, Dobriyal Brothers, Kourispower Pty. Ltd, Vortex Hydro Energy LLC, Vortex Hydrokinetics LLC, Vortex Hydropower Systems Design and Manufacturing NZ, and AES Hydro.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

Table of Contents:

1 INTRODUCTION

- 1.1 Scope of the Study
- 1.2 Market Definition and
- 1.3 Study Assumptions

2 RESEARCH METHODOLOGY

3 EXECUTIE SUMMARY

4 MARKET OVERVIEW

- 4.1 Introduction
- 4.2 Market Size and Demand Forecast in USD billion, till 2029
- 4.3 Recent Trends and Developments
- 4.4 Government Policies and Regulations
- 4.5 Market Dynamics
 - 4.5.1 Drivers
 - 4.5.1.1 Rising demand to for clean energy projects
 - 4.5.1.2 Adoption of new and less finance intensive renewable energy sources
 - 4.5.2 Restraints
 - 4.5.2.1 Technological challenges
- 4.6 Supply Chain Analysis
- 4.7 Porter's Five Forces Analysis
 - 4.7.1 Bargaining Power of Suppliers
 - 4.7.2 Bargaining Power of Consumers
 - 4.7.3 Threat of New Entrants
 - 4.7.4 Threat of Substitutes Products and Services
 - 4.7.5 Intensity of Competitive Rivalry
- 4.8 Investment Analysis

5 MARKET SEGMENTATION

- 5.1 By Capacity

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- 5.1.1 Less than 15 kW
- 5.1.2 15 kW to 50 kW
- 5.1.3 Above 50 kW
- 5.2 By Application
 - 5.2.1 Off-grid Residential
 - 5.2.2 On-grid Industrial
- 5.3 Geography
 - 5.3.1 North America
 - 5.3.1.1 United States
 - 5.3.1.2 Canada
 - 5.3.1.3 Rest of North America
 - 5.3.2 South America
 - 5.3.2.1 Brazil
 - 5.3.2.2 Argentina
 - 5.3.2.3 Colombia
 - 5.3.2.4 Rest of South America
 - 5.3.3 Middle East and Africa
 - 5.3.3.1 Saudi Arabia
 - 5.3.3.2 United Arab Emirates
 - 5.3.3.3 Qatar
 - 5.3.3.4 South Africa
 - 5.3.3.5 Egypt
 - 5.3.3.6 Nigeria
 - 5.3.3.7 Rest of Middle East and Africa
 - 5.3.4 Asia-Pacific
 - 5.3.4.1 China
 - 5.3.4.2 India
 - 5.3.4.3 Japan
 - 5.3.4.4 Vietnam
 - 5.3.4.5 Thailand
 - 5.3.4.6 Indonesia
 - 5.3.4.7 Malaysia
 - 5.3.4.8 Rest of Asia-Pacific
 - 5.3.5 Europe
 - 5.3.5.1 Germany
 - 5.3.5.2 France
 - 5.3.5.3 United Kingdom
 - 5.3.5.4 Spain
 - 5.3.5.5 NORDIC
 - 5.3.5.6 Russia
 - 5.3.5.7 Turkey
 - 5.3.5.8 Rest of Europe

6 COMPETITIVE LANDSCAPE

- 6.1 Mergers and Acquisitions, Joint Ventures, Collaborations, and Agreements
- 6.2 Strategies Adopted by Leading Players
- 6.3 Company Profiles

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- 6.3.1 Market Players
 - 6.3.1.1 Vortex Group
 - 6.3.1.2 Suneco Hydro
 - 6.3.1.3 Turbulent Hydro
 - 6.3.1.4 Dobriyal Brothers
 - 6.3.1.5 Kourispower Pty. Ltd
 - 6.3.1.6 Vortex Hydro Energy LLC
 - 6.3.1.7 AES Hydro
- 6.4 Market Ranking Analysis
- 6.5 List of Other Prominent Companies

7 MARKET OPPORTUNITIES AND FUTURE TRENDS

- 7.1 High potential in the water course

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