Hydropower - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2020 - 2029

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Report description:

The Hydropower Market size is estimated at 1.40 terawatt in 2024, and is expected to reach 1.47 terawatt by 2029, growing at a CAGR of 1.02% during the forecast period (2024-2029).

Key Highlights
-Over the medium term, gactors such as the increasing number of new hydropower projects backed by government support and the rising demand for reliable electricity are expected to drive the market during the forecast period.
-On the other hand, negative environmental cnsequences of hydropower projects are likely to hinder the market growth during the forecast period.
-Nevertheless, emerging technological trends aimed at increasing hydropower generation are expected to provide significant opportunities for the hydropower market in the coming years.
-Asia-Pacifc is estimated to dominate the market due to increasing investment in hydropower projects across the various countries in the region.

Hydropower Market Trends

The Large Hydropower (Greater Than 100 MW) Segment to Dominate the Market

- Large-scale hydropower is a form of renewable energy generation derived from flowing water, which is used to drive large water turbines. In order to generate large amounts of hydroelectricity for cities, lakes, reservoirs, and dams are needed to store and

regulate water for later release for power generation, irrigation, and domestic or industrial use. Since large-scale hydropower facilities can easily be turned on and off, hydropower has become more reliable than most other energy sources for meeting peak electricity demands throughout the day.
- Conventional hydroelectric dams, pumped storage, and run-of-the-river are the different types of large-scale hydropower plants worldwide.
- As per International Renewable Energy Agency, around USD 7.55 billion was invested in hydropower globally in 2022, whereas around USD 7.83 billion was invested in 2021. The constant investment in new hydropower capacity globally drives growth in large hydropower segments. Also, the average cost of large hydropower installation is comparatively low.
- China, Brazil, the United States, Canada, India, and Japan are the major countries in the deployment of large-scale hydropower projects across the world. Factors such as a shift towards cleaner energy sources and plans to increase the share of renewable energy in the total power generation mix across all the major developed and emerging economies across the world are expected to drive the large hydropower segment during the forecast period.
- In addition to the major hydropower countries, smaller countries from the Southeast Asia region are also moving forward rapidly in the large hydropower development. Increasing demand for energy to boost the Mekong economy has attracted riparian countries' keen interest in hydropower development. Over the last few decades, this has been evidenced by extensive investment in hydropower projects across the region.
- For instance, the Lao government announced that it plans to complete 12 hydropower dam projects with a total capacity of 1,950 MW. Hydropower development is a central priority of the Lao government's plan to export around 20,000 MW of electricity to its neighboring countries by 2030.
- In May 2022, Drax Group PLC invested USD 616 million in the Cruachan power station. The company planned to add 600 MW of underground pumped storage hydropower capacity to the Cruachan power station. The company plans to double the Cruachan facility's capacity by 2030, and work on-site begins in 2024. The company plans to hollow out a cavern in Ben Cruachan and excavate around two million tons of rock to house the power station and related infrastructure.
- Therefore, based on the factors mentioned above, the large hydropower (greater than 100 MW) segment is expected to dominate the global hydropower market during the forecast period.

Asia-Pacific to Dominate the Market

- The Asian-Pacific region has dominated the hydropower market in recent years, and it is likely to maintain its dominance during the forecast period. According to International Renewable Energy Agency, as of 2022, China is the global leader in the hydropower market, with an installed capacity of 413.5 GW.
- China announced its plan to become carbon neutral by 2060 and peak coal consumption by 2025. This led to increased investment in the renewable sector, and in 2022, around 22.5 GW of new hydropower was installed.
- In May 2023, the National Development and Reform Commission (NDRC) of China announced to approval construction of a new hydropower plant in the Xizang Autonomous region which will have capital backing of around USD 8.43 billion. The annual average electricity volume produced by the plant will surpass 11.28 billion kilowatt-hours.
- Further, in February 2023, India approved a USD 3.9 billion investment for the 2,880 megawatts (MW) Dibang hydropower project in Arunachal Pradesh, National Hydroelectric Power Corporation (NHPC), and it is estimated that this project will take nine years to build.
- Therefore, based on the factors mentioned above, Asia-Pacific is expected to dominate the global hydropower market during the forecast period.

Hydropower Industry Overview

The hydropower market is semi-consolidated. Some of the major players include (not in particular order) GE Renewable Energy, Siemens Energy AG, Andritz AG, Voith GmbH & Co. KGaA, and PJSC RusHydro, among others.

In March 2022, ANDRITZ and the Electricity Generating Authority of Thailand (EGAT) signed a Memorandum of Understanding (MoU) to jointly explore and expand business opportunities for hydropower projects in Thailand and surrounding Southeast Asian countries.

Additional Benefits:

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

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