

Small Hydropower - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Small Hydropower Market size in terms of installed base is expected to grow from 93.54 gigawatt in 2025 to 110.98 gigawatt by 2030, at a CAGR of 3.48% during the forecast period (2025-2030).

Key Highlights

- Over the medium term, factors like increasing investment in the small hydropower market and increasing demand for clean electricity are expected to drive the market.
- On the other hand, an unstable energy supply significantly hinders market growth.
- Nevertheless, integrating IoT with hydropower and the positive outlook toward small hydropower dams to sustain lives in rural communities are expected to create enormous opportunities for the Small Hydropower Market.
- Asia-Pacific is expected to be the largest market in the forecast period due to the high demand for electricity in the region. This will facilitate further growth.

Small Hydropower Market Trends

The 1-10 MW Segment Expected to Dominate the Market

- During the forecast period, the 1-10 MW segment is expected to be the most abundant small hydropower market in capacity. This higher proportion of 1-10 MW plants can be attributed to small-scale decentralized projects for rural electrification deployed in developing countries, particularly in Asia.

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- Further, the investment costs per kW for small hydropower plants in the 1 - 10 MW range are generally lower than those for plants under 1 MW. The 1 - 10 MW plants also benefit from a higher head and greater installed capacity.
- Developing economies, such as India and China, regions in Southeast Asia and Uzbekistan, and countries in Europe, like the United Kingdom, are giving equal priority to small hydropower projects along with other renewable energy sources.
- According to Digest of UK Energy Statistics (DUKES), From 2013 to 2023, the United Kingdom (UK) saw a consistent rise in electricity generation from small-scale hydro sources. By 2023, the UK harnessed 1,377 gigawatt hours of electricity from its small hydropower facilities. This increase in growth rate is expected to continue during the forecasted period.
- Moreover, the International Renewable Energy Agency's (IRENA) evaluation of several real-world small hydropower projects in developing countries revealed an LCOE range of USD 0.02 to USD 0.10/kWh. This positions small hydro as a highly cost-competitive choice for grid electricity supply and off-grid rural electrification initiatives. Many developing countries witnessed significant developments in small hydropower projects in such a scenario.
- For instance, in April 2024, Kenya Electricity Generating Company (KenGen), the state power producer of Kenya, called for expressions of interest from qualified consultants. The focus is on conducting pre-feasibility studies for the development of new small hydropower plants and assessing the potential rehabilitation and redevelopment of existing ones.
- Therefore, based on the abovementioned factors, the 1-10 MW capacity segment will dominate the small global hydropower market during the forecast period.

Asia-Pacific Expected to Dominate the Market

- The Asia-Pacific region has dominated the small hydropower (SHP) market in recent years and will likely maintain its dominance during the forecast period. As of 2023, Asia-Pacific continues to have the largest installed capacity and potential for small hydropower up to 10 MW.
- Major countries such as India and China are giving equal priority to small hydropower projects along with other renewable energy sources. For instance, in 2016, the Indian Institute of Technology, Roorkee, conducted an assessment of the potential for Small Hydropower. According to their findings, Small Hydropower has an estimated potential of 21,133 MW, spread across 7,133 identified sites. This assessment encompasses Run-of-River, Canal-based, and Dam-toe projects.
- As of March 2024, the total installed capacity for small-hydro power (SHP) in India reached 5,003.25 MW, as reported by the Central Electricity Authority (CEA). In the fiscal year 2023-24, SHP plants generated 9,485.04 million units (MUs).
- Furthermore, Vietnam published Power Development Plan 8 (PDP8) in 2021, which targets a share of 75% for renewable energy by 2045. The total capacity of small hydropower sources is targeted to reach 4,800 MW in 2025, 5,000 MW in 2030, and nearly 6,000 MW by 2045. The government plans to invest USD 13 billion in the power sector, and hydropower would account for 17.7% -19.5% of the total installed capacity.
- Further, the region witnessed significant developments in small-scale hydro projects. For instance, in January 2024, the government of Meghalaya signed a Memorandum of Understanding (MOU) with ONGC Tripura Power Company Ltd (OTPC), marking a strategic initiative to tap into the state's vast hydropower potential. The MOU sets ambitious goals, including establishing a Pump Storage Hydro Power Project, various large and small-scale hydroelectric power ventures, and innovative solutions like floating solar projects.
- Therefore, based on the abovementioned factors, Asia-Pacific is expected to dominate the global small hydropower market during the forecast period.

Small Hydropower Industry Overview

The global small hydropower market is fragmented. Some major players (in no particular order) include Andritz AG, Voith GmbH & Co. KGaA, Siemens Energy AG, GE Renewable Energy, and Gilbert Gilkes & Gordon Ltd., among others.

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Additional Benefits:

- The market estimate (ME) sheet in Excel format
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