

Hydropower Plant Construction Market Outlook 2025-2034: Market Share, and Growth Analysis By Type (Water Storage, Diverted, Pumped Storage), By Capacity (Large hydropower plants, Medium hydropower plants, Small hydropower plants, Other Capacities), By Application

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Abstracts

The Hydropower Plant Construction Market is valued at USD 18.1 billion in 2025 and is projected to grow at a CAGR of 7.5% to reach USD 34.8 billion by 2034. The Hydropower Plant Construction Market encompasses the planning, engineering, and building of facilities that harness water's kinetic energy to produce electricity. This sector includes large-scale dam construction, run-of-river installations, pumped storage facilities, and the refurbishment of existing plants. Hydropower remains a cornerstone of renewable energy strategies worldwide due to its reliability, longevity, and cost-effectiveness. Key market participants range from engineering and construction firms to turbine manufacturers and environmental consulting companies. The sector's growth is fueled by increasing global electricity demand, carbon reduction goals, and governments' push for sustainable energy infrastructure. Additionally, hydropower plants serve a dual purpose: generating power and providing water management benefits such as flood control and irrigation. Despite challenges related to environmental regulations and capital intensity, the Hydropower Plant Construction Market continues to expand, adapting to modern demands through innovation and strategic investments. The Hydropower Plant Construction Market experienced steady activity as governments and utilities pursued long-term renewable energy projects. Regions like Southeast Asia, Africa, and South America emerged as focal points for new hydropower plant developments. Large-scale projects, such as multipurpose dams, gained traction due to their ability to deliver electricity, irrigation, and flood control

benefits. The rehabilitation of older hydropower facilities also became a priority, driven by the need to maintain performance standards and comply with stricter environmental regulations. Technological advancements helped reduce construction timelines and improve overall project efficiency. At the same time, collaboration between public and private entities increased, with public-private partnerships facilitating funding and expediting permitting processes. Sustainability remained a core focus, prompting builders to integrate eco-friendly materials, implement better fish passage solutions, and engage in more transparent community consultations to ensure long-term viability and support. The Hydropower Plant Construction Market is expected to maintain momentum, bolstered by the ongoing global energy transition and growing electricity demand in developing regions. Future developments will likely involve more decentralized small- and medium-sized hydropower projects, particularly in rural and remote areas. Emerging technologies, such as modular hydropower systems and advanced turbine designs, will continue to enhance efficiency and reduce environmental impact. Pumped storage projects are anticipated to play a greater role in energy storage strategies, balancing grid reliability as intermittent renewables like wind and solar gain market share. Meanwhile, market players will place increased emphasis on digital tools, leveraging data analytics and artificial intelligence to improve construction planning, resource allocation, and operational forecasting. Over the long term, strengthened policy frameworks, international financing initiatives, and increased stakeholder collaboration will shape the market's trajectory, ensuring hydropower's continued role as a key component of the global energy mix.

Key Insights Hydropower Plant Construction Market

Emerging modular hydropower systems are enabling faster construction timelines and reducing project costs by standardizing components and designs.

Innovative fish passage technologies are being integrated into new and existing hydropower plants to mitigate environmental impacts on aquatic ecosystems.

Pumped storage hydropower projects are gaining momentum as grid operators seek reliable, large-scale energy storage solutions for balancing intermittent renewables.

Increased adoption of digital engineering tools, including Building Information Modeling (BIM) and AI-driven project management platforms, is improving efficiency and accuracy in hydropower plant construction.

Decentralized and community-scale hydropower projects are becoming more prominent, expanding access to clean energy in remote and underserved areas.

Rising global demand for electricity, especially in developing regions, is creating strong incentives for new hydropower plant construction.

Decarbonization goals and the transition away from fossil fuels are driving investment in large-scale renewable infrastructure projects like hydropower plants.

Government policies and subsidies supporting renewable energy development are encouraging private sector participation and funding in hydropower construction.

Advancements in turbine and generator technologies are improving plant efficiency, reducing lifecycle costs, and boosting the economic attractiveness of hydropower projects.

Complex permitting processes, lengthy approval timelines, and stringent environmental regulations can delay project starts, increase costs, and hinder market growth.

Hydropower Plant Construction Market Segmentation

By Type

Water Storage

Diverted

Pumped Storage

By Capacity

Large hydropower plants

Medium hydropower plants

Small hydropower plants

Other Capacities

By Application

City Power Supply

Industrial Power Supply

Military Power Supply

Other Applications

Key Companies Analysed

PowerChina Group

Bouygues Construction SA

Sinohydro Corporation

Vinci Construction

Siemens Energy AG

ABB Group

Duke Energy Corporation

Toshiba Corporation

China Three Gorges Corporation

Strabag SE

Statkraft AS

Skanska Group

Hydro-Québec

Verbund AG

Enel Green Power

Webuild SpA

Dongfang Electric Corporation

Andritz AG

Suez Group

RusHydro

SNC-Lavalin Group Inc.

BC Hydro

Voith Group

GE Renewable Energy

Astaldi S.p.A.

Bharat Heavy Electricals Limited (BHEL)

Alstom SA

Innergex Renewable Energy Inc.

Voimaosakeyhtiö SF

Hydropower Plant Construction Market Analytics

The report employs rigorous tools, including Porter's Five Forces, value chain mapping, and scenario-based modeling, to assess supply–demand dynamics. Cross-sector influences from parent, derived, and substitute markets are evaluated to identify risks and opportunities. Trade and pricing analytics provide an up-to-date view of international flows, including leading exporters, importers, and regional price trends.

Macroeconomic indicators, policy frameworks such as carbon pricing and energy security strategies, and evolving consumer behavior are considered in forecasting scenarios. Recent deal flows, partnerships, and technology innovations are incorporated to assess their impact on future market performance.

Hydropower Plant Construction Market Competitive Intelligence

The competitive landscape is mapped through OG Analysis' proprietary frameworks, profiling leading companies with details on business models, product portfolios, financial performance, and strategic initiatives. Key developments such as mergers & acquisitions, technology collaborations, investment inflows, and regional expansions are analyzed for their competitive impact. The report also identifies emerging players and innovative startups contributing to market disruption.

Regional insights highlight the most promising investment destinations, regulatory landscapes, and evolving partnerships across energy and industrial corridors.

Countries Covered

North America — Hydropower Plant Construction market data and outlook to 2034

United States

Canada

Mexico

Europe — Hydropower Plant Construction market data and outlook to 2034

Germany

United Kingdom

France

Italy

Spain

BeNeLux

Russia

Sweden

Asia-Pacific — Hydropower Plant Construction market data and outlook to 2034

China

Japan

India

South Korea

Australia

Indonesia

Malaysia

Vietnam

Middle East and Africa — Hydropower Plant Construction market data and outlook to 2034

Saudi Arabia

South Africa

Iran

UAE

Egypt

South and Central America — Hydropower Plant Construction market data and outlook to 2034

Brazil

Argentina

Chile

Peru

** We can include data and analysis of additional countries on demand.*

Research Methodology

This study combines primary inputs from industry experts across the Hydropower Plant Construction value chain with secondary data from associations, government publications, trade databases, and company disclosures. Proprietary modeling techniques, including data triangulation, statistical correlation, and scenario planning, are applied to deliver reliable market sizing and forecasting.

Key Questions Addressed

What is the current and forecast market size of the Hydropower Plant Construction industry at global, regional, and country levels?

Which types, applications, and technologies present the highest growth potential?

How are supply chains adapting to geopolitical and economic shocks?

What role do policy frameworks, trade flows, and sustainability targets play in shaping demand?

Who are the leading players, and how are their strategies evolving in the face of global uncertainty?

Which regional “hotspots” and customer segments will outpace the market, and what go-to-market and partnership models best support entry and expansion?

Where are the most investable opportunities—across technology roadmaps, sustainability-linked innovation, and M&A—and what is the best segment to invest over the next 3–5 years?

Your Key Takeaways from the Hydropower Plant Construction Market Report

Global Hydropower Plant Construction market size and growth projections (CAGR), 2024-2034

Impact of Russia-Ukraine, Israel-Palestine, and Hamas conflicts on Hydropower Plant Construction trade, costs, and supply chains

Hydropower Plant Construction market size, share, and outlook across 5 regions and 27 countries, 2023-2034

Hydropower Plant Construction market size, CAGR, and market share of key products, applications, and end-user verticals, 2023-2034

Short- and long-term Hydropower Plant Construction market trends, drivers, restraints, and opportunities

Porter’s Five Forces analysis, technological developments, and Hydropower Plant Construction supply chain analysis

Hydropower Plant Construction trade analysis, Hydropower Plant Construction market price analysis, and Hydropower Plant Construction supply/demand dynamics

Profiles of 5 leading companies—overview, key strategies, financials, and

products

Latest Hydropower Plant Construction market news and developments

Additional Support

With the purchase of this report, you will receive

An updated PDF report and an MS Excel data workbook containing all market tables and figures for easy analysis.

7-day post-sale analyst support for clarifications and in-scope supplementary data, ensuring the deliverable aligns precisely with your requirements.

Complimentary report update to incorporate the latest available data and the impact of recent market developments.

** The updated report will be delivered within 3 working days*

Contents

1. TABLE OF CONTENTS

- 1.1 List of Tables
- 1.2 List of Figures

2. GLOBAL HYDROPOWER PLANT CONSTRUCTION MARKET SUMMARY, 2025

- 2.1 Hydropower Plant Construction Industry Overview
 - 2.1.1 Global Hydropower Plant Construction Market Revenues (In US\$ billion)
- 2.2 Hydropower Plant Construction Market Scope
- 2.3 Research Methodology

3. HYDROPOWER PLANT CONSTRUCTION MARKET INSIGHTS, 2024-2034

- 3.1 Hydropower Plant Construction Market Drivers
- 3.2 Hydropower Plant Construction Market Restraints
- 3.3 Hydropower Plant Construction Market Opportunities
- 3.4 Hydropower Plant Construction Market Challenges
- 3.5 Tariff Impact on Global Hydropower Plant Construction Supply Chain Patterns

4. HYDROPOWER PLANT CONSTRUCTION MARKET ANALYTICS

- 4.1 Hydropower Plant Construction Market Size and Share, Key Products, 2025 Vs 2034
- 4.2 Hydropower Plant Construction Market Size and Share, Dominant Applications, 2025 Vs 2034
- 4.3 Hydropower Plant Construction Market Size and Share, Leading End Uses, 2025 Vs 2034
- 4.4 Hydropower Plant Construction Market Size and Share, High Growth Countries, 2025 Vs 2034
- 4.5 Five Forces Analysis for Global Hydropower Plant Construction Market
 - 4.5.1 Hydropower Plant Construction Industry Attractiveness Index, 2025
 - 4.5.2 Hydropower Plant Construction Supplier Intelligence
 - 4.5.3 Hydropower Plant Construction Buyer Intelligence
 - 4.5.4 Hydropower Plant Construction Competition Intelligence
 - 4.5.5 Hydropower Plant Construction Product Alternatives and Substitutes Intelligence
 - 4.5.6 Hydropower Plant Construction Market Entry Intelligence

5. GLOBAL HYDROPOWER PLANT CONSTRUCTION MARKET STATISTICS – INDUSTRY REVENUE, MARKET SHARE, GROWTH TRENDS AND FORECAST BY SEGMENTS, TO 2034

5.1 World Hydropower Plant Construction Market Size, Potential and Growth Outlook, 2024- 2034 (\$ billion)

5.1 Global Hydropower Plant Construction Sales Outlook and CAGR Growth By Type, 2024- 2034 (\$ billion)

5.2 Global Hydropower Plant Construction Sales Outlook and CAGR Growth By Capacity, 2024- 2034 (\$ billion)

5.3 Global Hydropower Plant Construction Sales Outlook and CAGR Growth By Application, 2024- 2034 (\$ billion)

5.4 Global Hydropower Plant Construction Market Sales Outlook and Growth by Region, 2024- 2034 (\$ billion)

6. ASIA PACIFIC HYDROPOWER PLANT CONSTRUCTION INDUSTRY STATISTICS – MARKET SIZE, SHARE, COMPETITION AND OUTLOOK

6.1 Asia Pacific Hydropower Plant Construction Market Insights, 2025

6.2 Asia Pacific Hydropower Plant Construction Market Revenue Forecast By Type, 2024- 2034 (USD billion)

6.3 Asia Pacific Hydropower Plant Construction Market Revenue Forecast By Capacity, 2024- 2034 (USD billion)

6.4 Asia Pacific Hydropower Plant Construction Market Revenue Forecast By Application, 2024- 2034 (USD billion)

6.5 Asia Pacific Hydropower Plant Construction Market Revenue Forecast by Country, 2024- 2034 (USD billion)

6.5.1 China Hydropower Plant Construction Market Size, Opportunities, Growth 2024- 2034

6.5.2 India Hydropower Plant Construction Market Size, Opportunities, Growth 2024- 2034

6.5.3 Japan Hydropower Plant Construction Market Size, Opportunities, Growth 2024- 2034

6.5.4 Australia Hydropower Plant Construction Market Size, Opportunities, Growth 2024- 2034

7. EUROPE HYDROPOWER PLANT CONSTRUCTION MARKET DATA, PENETRATION, AND BUSINESS PROSPECTS TO 2034

7.1 Europe Hydropower Plant Construction Market Key Findings, 2025

7.2 Europe Hydropower Plant Construction Market Size and Percentage Breakdown By Type, 2024- 2034 (USD billion)

7.3 Europe Hydropower Plant Construction Market Size and Percentage Breakdown By Capacity, 2024- 2034 (USD billion)

7.4 Europe Hydropower Plant Construction Market Size and Percentage Breakdown By Application, 2024- 2034 (USD billion)

7.5 Europe Hydropower Plant Construction Market Size and Percentage Breakdown by Country, 2024- 2034 (USD billion)

7.5.1 Germany Hydropower Plant Construction Market Size, Trends, Growth Outlook to 2034

7.5.2 United Kingdom Hydropower Plant Construction Market Size, Trends, Growth Outlook to 2034

7.5.2 France Hydropower Plant Construction Market Size, Trends, Growth Outlook to 2034

7.5.2 Italy Hydropower Plant Construction Market Size, Trends, Growth Outlook to 2034

7.5.2 Spain Hydropower Plant Construction Market Size, Trends, Growth Outlook to 2034

8. NORTH AMERICA HYDROPOWER PLANT CONSTRUCTION MARKET SIZE, GROWTH TRENDS, AND FUTURE PROSPECTS TO 2034

8.1 North America Snapshot, 2025

8.2 North America Hydropower Plant Construction Market Analysis and Outlook By Type, 2024- 2034 (\$ billion)

8.3 North America Hydropower Plant Construction Market Analysis and Outlook By Capacity, 2024- 2034 (\$ billion)

8.4 North America Hydropower Plant Construction Market Analysis and Outlook By Application, 2024- 2034 (\$ billion)

8.5 North America Hydropower Plant Construction Market Analysis and Outlook by Country, 2024- 2034 (\$ billion)

8.5.1 United States Hydropower Plant Construction Market Size, Share, Growth Trends and Forecast, 2024- 2034

8.5.1 Canada Hydropower Plant Construction Market Size, Share, Growth Trends and Forecast, 2024- 2034

8.5.1 Mexico Hydropower Plant Construction Market Size, Share, Growth Trends and Forecast, 2024- 2034

9. SOUTH AND CENTRAL AMERICA HYDROPOWER PLANT CONSTRUCTION MARKET DRIVERS, CHALLENGES, AND FUTURE PROSPECTS

9.1 Latin America Hydropower Plant Construction Market Data, 2025

9.2 Latin America Hydropower Plant Construction Market Future By Type, 2024- 2034 (\$ billion)

9.3 Latin America Hydropower Plant Construction Market Future By Capacity, 2024-2034 (\$ billion)

9.4 Latin America Hydropower Plant Construction Market Future By Application, 2024-2034 (\$ billion)

9.5 Latin America Hydropower Plant Construction Market Future by Country, 2024-2034 (\$ billion)

9.5.1 Brazil Hydropower Plant Construction Market Size, Share and Opportunities to 2034

9.5.2 Argentina Hydropower Plant Construction Market Size, Share and Opportunities to 2034

10. MIDDLE EAST AFRICA HYDROPOWER PLANT CONSTRUCTION MARKET OUTLOOK AND GROWTH PROSPECTS

10.1 Middle East Africa Overview, 2025

10.2 Middle East Africa Hydropower Plant Construction Market Statistics By Type, 2024- 2034 (USD billion)

10.3 Middle East Africa Hydropower Plant Construction Market Statistics By Capacity, 2024- 2034 (USD billion)

10.4 Middle East Africa Hydropower Plant Construction Market Statistics By Application, 2024- 2034 (USD billion)

10.5 Middle East Africa Hydropower Plant Construction Market Statistics by Country, 2024- 2034 (USD billion)

10.5.1 Middle East Hydropower Plant Construction Market Value, Trends, Growth Forecasts to 2034

10.5.2 Africa Hydropower Plant Construction Market Value, Trends, Growth Forecasts to 2034

11. HYDROPOWER PLANT CONSTRUCTION MARKET STRUCTURE AND COMPETITIVE LANDSCAPE

11.1 Key Companies in Hydropower Plant Construction Industry

- 11.2 Hydropower Plant Construction Business Overview
- 11.3 Hydropower Plant Construction Product Portfolio Analysis
- 11.4 Financial Analysis
- 11.5 SWOT Analysis

12 APPENDIX

- 12.1 Global Hydropower Plant Construction Market Volume (Tons)
- 12.1 Global Hydropower Plant Construction Trade and Price Analysis
- 12.2 Hydropower Plant Construction Parent Market and Other Relevant Analysis
- 12.3 Publisher Expertise
- 12.2 Hydropower Plant Construction Industry Report Sources and Methodology

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