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Small Modular Reactor Market Forecasts to 2034 – Global Analysis By Reactor Type (Pressurized Water Reactor (PWR), Boiling Water Reactor (BWR), High-Temperature Gas-Cooled Reactor (HTGR), Molten Salt Reactor (MSR), Fast Neutron Reactor (FNR), Heavy Water Reactor (HWR), Micro Modular Reactor (MMR), and Other Reactor Types), Coolant Type, Power Capacity, Deployment Mode, Application, End User, Construction Type, Fuel Type, Module Manufacturing Approach, and By Geography

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Abstracts

According to Stratistics MRC, the Global Small Modular Reactor Market is accounted for $8.7 billion in 2026 and is expected to reach $24.5 billion by 2034 growing at a CAGR of 13.7% during the forecast period. Small Modular Reactors (SMRs) are advanced nuclear reactors with power capacities typically up to 300 MWe, designed for modular construction, factory fabrication, and flexible deployment. These reactors offer advantages including lower upfront capital investment, reduced construction timelines, enhanced safety features, and suitability for remote locations and diverse applications. The market encompasses various coolant types including water-cooled, gas-cooled, liquid metal-cooled, molten salt-cooled, and other coolant technologies, serving power capacity segments up to 50 MWe, 51-100 MWe, and 101-300 MWe. Growing global energy demand, increasing focus on decarbonization, government support for advanced nuclear technologies, and demand for reliable, low-carbon baseload power are key drivers of market expansion across all regions.

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Market Dynamics:

Driver:

Growing global energy demand and focus on decarbonization

The increasing global energy demand and urgent need to reduce greenhouse gas emissions are primary drivers for the small modular reactor market. SMRs offer a low-carbon, reliable baseload power solution that can complement intermittent renewable sources including solar and wind. Governments worldwide are setting ambitious climate targets that require significant expansion of clean energy capacity. Nuclear energy provides emissions-free electricity generation with high capacity factors, making it an essential component of decarbonization strategies. The modular design of SMRs enables phased investment and deployment, reducing financial risk compared to large-scale nuclear projects. As energy transition accelerates and climate goals become more ambitious, SMR adoption is gaining momentum across multiple regions.

Restraint:

High upfront costs and regulatory licensing challenges

The significant upfront investment required for SMR development and the complex regulatory licensing processes represent major restraints for the market. SMR projects still require substantial capital investment for design certification, licensing, and first-of-a-kind construction. Nuclear regulatory frameworks were developed for large reactors and require adaptation for SMR designs, creating timeline uncertainty. Licensing approval processes can extend over many years, delaying project deployment. First-of-a-kind costs and demonstration projects require significant financial support. The financial risk of new reactor designs may deter private investment. These cost and regulatory barriers affect project timelines and market entry, potentially limiting SMR adoption in the near term.

Opportunity:

Increasing demand for flexible and load-following nuclear power

The growing need for flexible power generation to balance intermittent renewable sources presents significant opportunities for SMR market expansion. Advanced SMR designs offer enhanced load-following capabilities, enabling nuclear power to

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complement variable renewable generation. SMRs can adjust output to match grid demands, providing grid stability and reliability. The modular nature of SMRs enables capacity additions matched to demand growth. Industrial applications including hydrogen production, desalination, and process heat create additional market opportunities. As renewable penetration increases and grid flexibility becomes more valuable, SMRs with enhanced operational flexibility capture growing market share, diversifying the addressable market.

Threat:

Competition from other clean energy technologies

Intense competition from other low-carbon energy sources including renewable energy and large-scale nuclear poses significant threats to SMR market growth. Solar and wind energy have experienced dramatic cost reductions and rapid deployment. Battery storage is advancing, addressing intermittency challenges. Large-scale nuclear construction offers economies of scale that SMRs may not fully replicate. Future energy system designs may favor different technology combinations. Policy support may shift toward established technologies with proven track records. This competition may limit SMR market share, particularly in regions where renewable resources are abundant and cost-effective.

Covid-19 Impact:

The COVID-19 pandemic had a mixed impact on the small modular reactor market. Initial disruptions included supply chain interruptions, construction delays, and regulatory process slowdowns. Project timelines were extended as work restrictions affected development activities. However, the pandemic reinforced focus on clean energy as governments included energy transition in economic recovery plans. Growing energy security concerns and supply chain considerations emerged. Post-pandemic, SMR development continues with increased government and industry attention on energy security, decarbonization, and technology innovation.

The Water-Cooled segment is expected to be the largest during the forecast period

The Water-Cooled segment is expected to account for the largest market share during the forecast period, driven by technology maturity, established regulatory frameworks, and broad industry experience with water-cooled reactor designs. Water-cooled SMRs leverage decades of operational experience from existing light water reactors, providing

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proven safety performance and established supply chains. The segment benefits from multiple designs in active development worldwide, including both integral PWR and boiling water reactor concepts. Extensive infrastructure and skilled workforce experience with water-cooled technology support deployment. With the largest number of designs and nearest-term deployment prospects, water-cooled SMRs maintain the largest market share.

The Up to 50 MWe segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the Up to 50 MWe segment is predicted to witness the highest growth rate, fueled by the suitability of very small SMRs for remote communities, mining operations, and industrial applications where smaller capacity matches demand profiles. Very small SMRs offer deployment flexibility and lower upfront investment for niche applications. The segment benefits from reduced site requirements and simplified logistics for remote location deployment. Growing interest in off-grid and industrial applications creates demand for small capacity reactors. As SMR technology evolves and new applications are developed, this segment delivers the fastest market growth.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share, supported by active SMR development programs, government funding, and regulatory modernization efforts. The United States and Canada are advancing multiple SMR designs through licensing and demonstration phases. Government support including funding for demonstration projects and regulatory modernization is accelerating. Strong private sector investment in SMR technology is developing. Established nuclear infrastructure and supply chain capabilities support deployment. With active development programs and significant investment, North America maintains its dominant market position.

Region with highest CAGR:

Over the forecast period, the Asia-Pacific region is anticipated to exhibit the highest CAGR, driven by growing energy demand, expanding nuclear programs, and government support for SMR development across countries including China, India, Russia, and South Korea. The region's large and growing energy demand creates substantial market opportunity. China and Russia are advancing SMR designs and construction projects. Growing interest in SMR technology is expanding across the

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region. Government energy security and decarbonization policies support nuclear expansion. As energy demand grows and SMR programs develop, Asia Pacific delivers the fastest small modular reactor market growth globally.

Key players in the market

Some of the key players in Small Modular Reactor Market include NuScale Power Corporation, GE Vernova Hitachi Nuclear Energy, Westinghouse Electric Company LLC, Rolls-Royce SMR Limited, Holtec International, TerraPower, LLC, X-energy, LLC, Kairos Power, LLC, ARC Clean Technology Canada Inc., Moltex Energy Canada Inc., Seaborg Technologies ApS, Newcleo SA, EDF SA, Korea Hydro & Nuclear Power Co., Ltd., China National Nuclear Corporation (CNNC), Rosatom State Atomic Energy Corporation, Mitsubishi Heavy Industries, Ltd., and BWX Technologies, Inc.

Key Developments:

In July 2026, SGE announced plans to construct a 4.2 GW UK Small Modular Reactor fleet consisting of fourteen GE Vernova Hitachi BWRX-300 units across three designated UK sites.

In July 2026, Holtec Nuclear Corporation filed for a Nasdaq initial public offering (IPO) to fund the commercial scaling of its SMR-300 pressurized water reactor program and nuclear service operations.

In June 2026, Videberg Kraft selected Rolls-Royce SMR as its strategic partner to construct three Small Modular Reactors on Sweden's V?r? peninsula.

In June 2026, the U.S. Department of Energy confirmed that Kairos Power's advanced reactor project formally transitioned into active construction under a $3.2 billion federal cost-sharing framework.

Reactor Types Covered:

Pressurized Water Reactor (PWR)

Boiling Water Reactor (BWR)

High-Temperature Gas-Cooled Reactor (HTGR)

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Molten Salt Reactor (MSR)

Fast Neutron Reactor (FNR)

Heavy Water Reactor (HWR)

Micro Modular Reactor (MMR)

Other Reactor Types

Coolant Types Covered:

Water-Cooled

Gas-Cooled

Liquid Metal-Cooled

Molten Salt-Cooled

Other Coolant Types

Power Capacities Covered:

Up to 50 MWe

51–100 MWe

101–300 MWe

Deployment Modes Covered:

Grid-Connected

Off-Grid

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- Remote and Island Power Systems
- Floating Nuclear Power Plants

Applications Covered:

- Electricity Generation
- Industrial Heat Generation
- District Heating
- Hydrogen Production
- Desalination
- Process Steam Supply
- Research and Demonstration
- Other Applications

End Users Covered:

- Utilities
- Industrial Facilities
- Oil & Gas Industry
- Mining Industry
- Government and Defense
- Research Institutions
- Commercial Facilities

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Other End Users

Construction Types Covered:

Land-Based SMRs

Marine-Based SMRs

Underground SMRs

Fuel Types Covered:

Low-Enriched Uranium (LEU)

High-Assay Low-Enriched Uranium (HALEU)

Mixed Oxide (MOX) Fuel

Thorium-Based Fuel

Other Fuel Types

Module Manufacturing Approaches Covered:

Factory-Fabricated Modular Construction

On-Site Modular Assembly

Hybrid Construction Approach

Regions Covered:

North America

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- United States
- Canada
- Mexico

Europe

- United Kingdom
- Germany
- France
- Italy
- Spain
- Netherlands
- Belgium
- Sweden
- Switzerland
- Poland
- Rest of Europe

Asia Pacific

- China
- Japan
- India
- South Korea

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- Australia
- Indonesia
- Thailand
- Malaysia
- Singapore
- Vietnam
- Rest of Asia Pacific

South America

- Brazil
- Argentina
- Colombia
- Chile
- Peru
- Rest of South America

Rest of the World (RoW)

- Middle East
  - Saudi Arabia
  - United Arab Emirates
  - Qatar

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- Israel
- Rest of Middle East

Africa

- South Africa
- Egypt
- Morocco
- Rest of Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

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All the customers of this report will be entitled to receive one of the following free customization options:

- Company Profiling
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  - SWOT Analysis of key players (up to 3)
- Regional Segmentation
  - Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)
- Competitive Benchmarking
  - Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) Regions are also represented in the same manner as above.

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