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Small Modular Reactor Construction Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Reactor Type (Pressurized Water Reactor, Boiling Water Reactor, Fast Neutron Reactor, Molten Salt Reactor, Others), By Construction Type (New Build SMR Construction, Retrofit/Upgrade of Existing Nuclear Facilities), By End-User (Government & Defense, Private Energy Companies, Industrial & Commercial, Academic & Research Institutions), By Region, and By Competition, 2020-2030F

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Abstracts

Market Overview

The Global Small Modular Reactor (SMR) Construction Market was valued at USD 6.26 Billion in 2024 and is projected to reach USD 9.34 Billion by 2030, growing at a CAGR of 6.74% during the forecast period. Small Modular Reactors are gaining momentum as a viable solution for delivering clean, safe, and reliable energy, especially amid the global transition to low-carbon power generation. These compact nuclear reactors, with capacities up to 300 megawatts, are designed for modular construction and factory assembly, offering shorter development timelines, scalability, and reduced upfront capital requirements compared to traditional nuclear plants. With rising electricity demand, grid modernization goals, and the pursuit of energy security, SMRs are becoming an integral part of long-term energy strategies in both developed and emerging regions. Countries including the United States, Canada, the UK, China, and

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Russia are actively investing in SMR projects for a range of applications—from civilian power generation to remote industrial use—strengthening the market outlook through government support, regulatory advancements, and technological innovation.

Key Market Drivers

Rising Electricity Demand and Grid Pressure

Global electricity demand is surging due to population growth, urbanization, and expanding digital infrastructure. This trend is placing strain on existing energy systems and driving the need for stable, low-carbon baseload power options. SMRs offer a scalable and flexible solution capable of supporting decentralized energy grids and accommodating future demand. For example, the electrification of transportation and growth in data center usage are significantly increasing electricity consumption, with projections showing a 50% rise by 2050. SMRs are well-positioned to support this growth, particularly in regions where traditional infrastructure expansion is not feasible. Their ability to be deployed near load centers helps minimize transmission losses while enhancing grid resilience and energy security.

Key Market Challenges

High Capital Investment and Financial Risk

Despite their modularity and compact footprint, SMRs still face significant cost barriers. The development of a single unit often involves capital expenditures ranging from USD 1 billion to USD 2 billion. Escalating project costs, such as those observed in NuScale’s initial deployment plans, have raised concerns about financial predictability. Furthermore, the lack of commercial operating history and regulatory uncertainties increase perceived investment risk, especially among private financiers. The extended time horizon for project returns, combined with limited economies of scale unless multiple modules are constructed, makes SMRs a challenging proposition for stakeholders seeking short-to-medium-term ROI. These financial complexities continue to impede faster market uptake.

Key Market Trends

Surge in Floating and Remote SMR Deployments

Floating and remote SMRs are emerging as innovative solutions for areas with limited

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or no access to centralized power infrastructure. These deployments are especially attractive for industrial operations in remote regions, island nations, and military installations. Russia's floating SMR project, Akademik Lomonosov, and Canada's initiatives for Arctic and mining site energy supply demonstrate the practicality of such systems. These units can be transported via barge or road and offer dual capabilities in electricity and heat generation. Micro-SMRs, with capacities below 50 MW, are also being developed to cater to specific applications such as small communities and off-grid facilities. As energy resilience and logistical simplicity become strategic priorities, demand for mobile and off-grid SMR solutions is expected to grow steadily, potentially accounting for a significant share of global SMR installations by 2035.

Key Market Players

NuScale Power

TerraPower

Holtec International

Rolls-Royce SMR

X-energy

GE Hitachi Nuclear Energy

China National Nuclear Corporation

Rosatom

Framatome

BWX Technologies

Report Scope:

In this report, the Global Small Modular Reactor Construction Market has been

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segmented into the following categories, in addition to the industry trends which have also been detailed below:

Small Modular Reactor Construction Market, By Reactor Type:

- Pressurized Water Reactor
- Boiling Water Reactor
- Fast Neutron Reactor
- Molten Salt Reactor
- Others

Small Modular Reactor Construction Market, By Construction Type:

- New Build SMR Construction
- Retrofit/Upgrade of Existing Nuclear Facilities

Small Modular Reactor Construction Market, By End-User:

- Government & Defense
- Private Energy Companies
- Industrial & Commercial
- Academic & Research Institutions

Small Modular Reactor Construction Market, By Region:

- North America
  - United States

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Canada

Mexico

Europe

Germany

France

United Kingdom

Italy

Spain

South America

Brazil

Argentina

Colombia

Asia-Pacific

China

India

Japan

South Korea

Australia

Middle East & Africa

Saudi Arabia

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UAE

South Africa

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Small Modular Reactor Construction Market.

Available Customizations:

Global Small Modular Reactor Construction Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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