



Energizing the future:

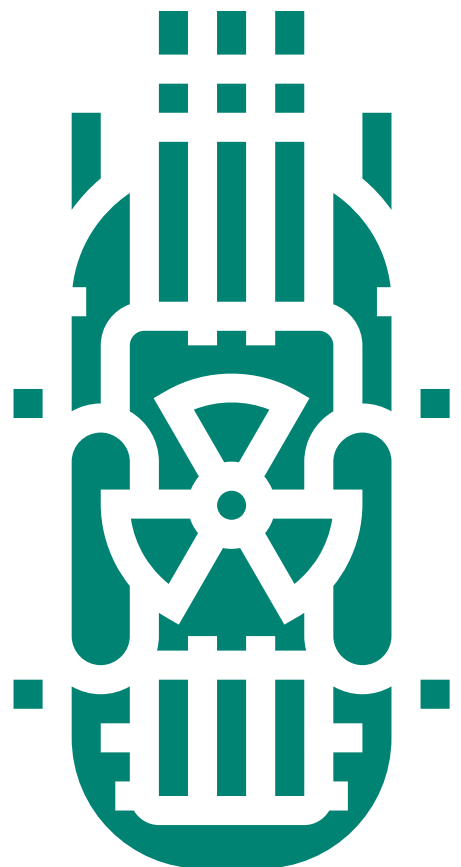
Exploring the promise of small modular reactor technologies

Small modular reactors are a transformative technology with the potential to revolutionize the global energy landscape.

As the demand for clean, reliable, and sustainable energy sources continues to rise, small modular reactors (SMRs) offer a solution to meet these challenges while addressing the growing need for decarbonization and energy security. This white paper surveys SMR technologies, exploring their historical development, key characteristics, benefits, challenges, and prospects. By delving into the intricacies of SMRs, their role in shaping the future of nuclear energy and advancing sustainability in the 21st century becomes clear.

What is a small modular reactor?

SMRs are a type of nuclear reactor characterized by compact size, typically producing less than 300MW, and modular design. SMRs hold significant importance in the energy sector for several reasons. First, their smaller size allows for more flexible deployment, enabling power generation in remote areas or regions with limited grid infrastructure. Second, SMRs offer the potential for cost savings and reduced financial risk compared to traditional large-scale nuclear power plants, as their modular design allows for incremental capacity additions and more accessible financing. SMRs also have the potential to play a crucial role in decarbonizing the energy sector by providing low-carbon baseload power that complements intermittent renewable sources like solar and wind.



Contents

- 4 A short history of SMRs
- 5 General characteristics of SMRs
- 6 Other SMR technologies
- 8 SMR design characteristics
- 10 SMR market trends upward
- 12 Current research and development Initiatives

