

Adaptive Energy Systems Sets the Standard for Modular Reactor Deployment: Safety, Sustainability, and Scalable Solutions

Adaptive Energy Systems leads with AMRs, setting benchmarks in safety, scalability, and sustainability while embracing Industry 4.0 and circular economy goals.

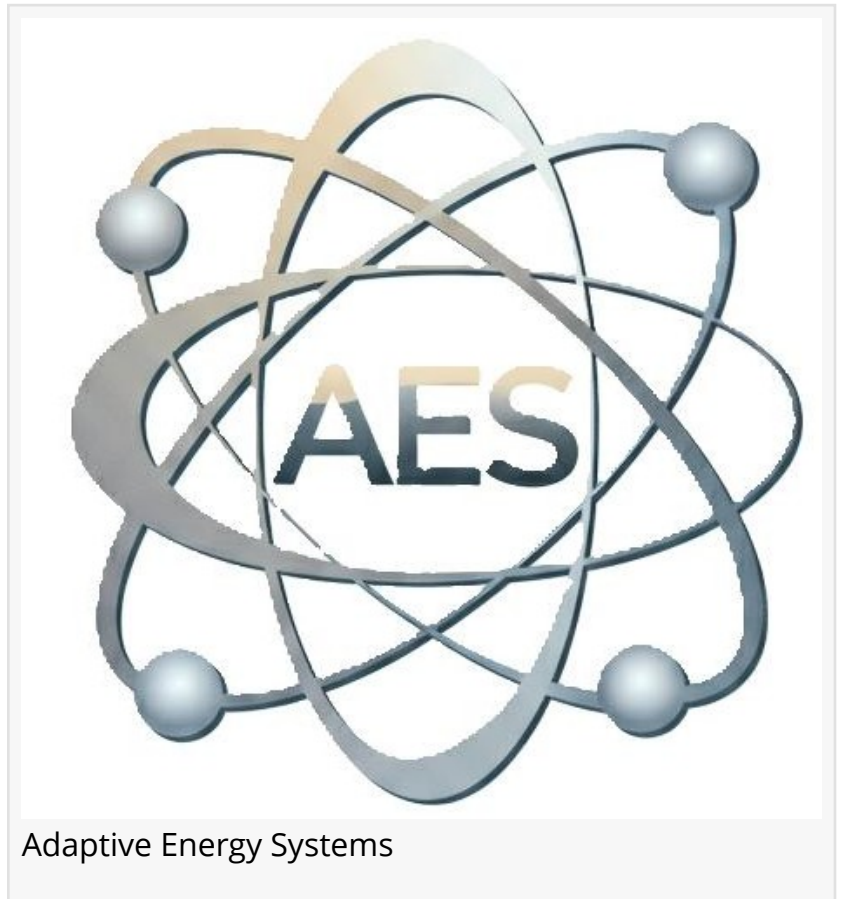
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[Adaptive Energy Systems](#), a pioneering company in modular reactor innovation, establishes the global quality benchmark for Gen IV+ Adaptive Modular Reactors by integrating their expertise into scalable, flexible solutions. This introduction concisely sets the stage for the company's modular reactor advancements, including Small Modular Reactors (SMRs) and advanced reactor designs for diverse applications. The company's [Adaptive](#)

[SMR](#) and broader AMR platform sets new records in efficiency, safety, and sustainability, establishing a precedent for nonproliferation-aligned modular reactor deployment across both established and emerging economic corridors globally.

Ronald Legarski, CEO of Adaptive Energy Systems, stated: "Our patent-pending [adaptive modular reactor](#) (AMR) platform establishes a first-of-its-kind use case for safe, modular reactor deployment. This groundbreaking approach sets a new standard for efficiency and reliability." He emphasized the company's focus on flexible, factory-standardized construction, thorium fuel compatibility, and a closed-loop waste management system. This new standard encompasses all AMR types to meet the energy demands of a wide spectrum of customer strategies.

Adaptive Energy Systems' AMR framework ensures flexibility, safety, and efficiency while



Adaptive Energy Systems

supporting configurations that address diverse global energy needs. The Adaptive SMR utilizes molten salt and thorium fuel for enhanced safety and efficiency, but the AMR standard remains versatile enough to support various reactor types. Yash Patel, COO of Adaptive Energy Systems, noted: “Adaptive Modular Reactors are designed with a focus on universal scalability and modularity. Our platform can adapt to specific regional energy demands while maintaining an industry-leading standard for safety and operational excellence.”

The AMR platform integrates innovative safety systems such as passive cooling, freeze plugs, and drainage tanks to ensure safe shutdown without operator intervention. Its flexible fuel compatibility includes support for thorium-based molten salt and hydrogen-cooled reactor types, aligning with nonproliferation standards. High thermal efficiency and lower material requirements compared to traditional reactors further underscore the platform's design benefits. By aligning with circular economy principles and embracing Industry 4.0 advancements, the AMR platform achieves smart integration and robust cybersecurity.



Adaptive Modular Reactor Solution

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We’re building a collaborative ecosystem to accelerate the deployment of modular reactor technology worldwide.”

Yash Patel

The Gen IV+ design incorporates advanced safety features, including molten salt coolant to prevent overheating, freeze plugs that enable passive shutdown in abnormal conditions, and drainage tanks for secure containment of molten fuel. These measures enhance operational safety across various environments. Thorium, a cornerstone of Adaptive Energy Systems’ strategy, reduces dependency on limited resources and mitigates risks associated with traditional fuels. Ronald Legarski highlighted: “Thorium’s

benefits extend beyond safety—it provides a path to true energy independence. Our AMR designs prioritize fuel flexibility, but thorium stands out for its ability to support global nonproliferation goals and reduce waste.”

Adaptive Modular Reactors are engineered to optimize on-premises efficiency and contribute an EMI-free, high-precision energy output to the supply chain. This ensures consistent power quality suitable for critical operations such as data centers, hospitals, and manufacturing facilities. Through its partnership with STRAY (www.straysystemes.com), Adaptive Energy Systems guarantees high power quality from generation to edge, supporting energy decentralization,

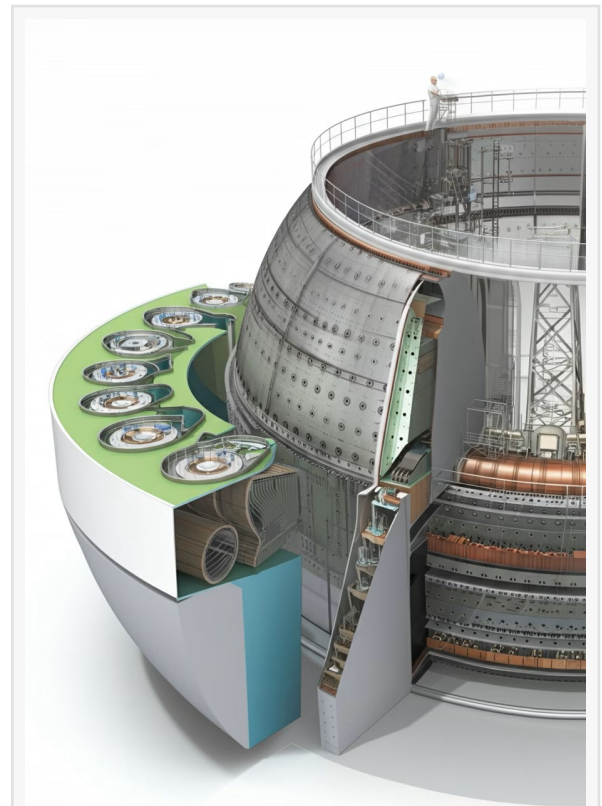
continuity, and local grid stability. The platform's design also incorporates advanced cybersecurity measures to counter evolving digital threats.

The company's factory-standardized modular approach simplifies deployment by reducing construction timelines and ensuring precision. Pre-certified reactor designs streamline regulatory approval processes, and integrated project management fosters seamless collaboration among stakeholders. According to Yash Patel: "Our factory-standardized approach provides unprecedented flexibility for global energy providers. From urban installations to off-grid sites, the Adaptive SMR adapts to every use case while maintaining cost efficiency."

Adaptive Energy Systems is launching a demonstration project to validate its AMR framework under real-world conditions. This initiative will highlight thorium fuel cycles, hybrid integration with renewable energy sources, and advanced power quality metrics. The project aims to showcase how AMRs can transform global energy infrastructure by providing safe, modular, and sustainable power solutions. Ronald Legarski added: "By expanding the range of modular reactor applications, we are meeting the growing energy demands of industries worldwide."

The Adaptive Modular Reactor platform supports diverse sectors, including defense, healthcare, water desalination, hydrogen production, disaster recovery, heavy industry, remote communities, and maritime operations. Its commitment to sustainability is evident through closed-loop waste management, near-zero carbon emissions, and efficient land use. Adaptive Energy Systems' collaborative ecosystem involves utility providers, government agencies, and private investors to accelerate modular reactor deployment globally.

Adaptive Energy Systems' vision emphasizes safety, scalability, and sustainability. By setting a global standard for AMRs, the company is shaping the future of energy independence and resilience. Ronald Legarski concluded: "Our goal is to make safe,



Adaptive Modular Reactor (AMR)



Adaptive Modular Reactor (AMR)
Factory

scalable AMR technology the global standard. We're empowering nations and industries with solutions that prioritize environmental responsibility, economic growth, and energy security."

About Adaptive Energy Systems

Adaptive Energy Systems is a global leader in Adaptive Modular Reactor solutions, specializing in the development and deployment of Small Modular Reactors (SMRs) and Advanced Modular Reactor (AMR) systems. The company's technologies set the global quality standard for safety, nonproliferation, and sustainability, delivering clean, resilient energy to industries and communities worldwide. Learn more at www.adaptiveenergysystems.com.

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Adaptive Modular Reactor (AMR) Lab

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