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XAMR® a new energy solution for decarbonization

NAAREA (Nuclear Abundant Affordable Resourceful Energy for All) is a French company developing a new energy solution : the XAMR® (eXtrasmall Advanced Modular Reactor), a mass-produced molten salt fast neutron microreactor. NAAREA's XAMR® will be capable of generating electricity and/or heat from long-lived spent fuel produced by current conventional reactors.

This paper aims to present how NAAREA envisions various applications for the purpose of decarbonizing human activities through its 80 megawatts thermal/ 40 megawatts electric reactor. Among these, the innovation of advanced nuclear lies in its ability to attack off-grid markets, such as medium-temperature (100-400°C) and high-temperature (400-600°C) industrial processes, district heating, electro-fuel production or carbon capture technologies. Given its technological choices, NAAREA will contribute locally to the construction of hybrid energy systems capable of securing the energy supply in addition to the electricity grid. The combination of molten salt technology and the miniaturization of the solution paves the way for a true decentralization of energy supply. In particular, the use of process or waste heat is made possible by the proximity to the consumer site. Besides, MSR's high safety standards will not only help qualify XAMR for many industrial and urban markets, but also ensure its acceptance and support by society.

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