

Press Release

NAAREA and Thorizon sign strategic industrial partnership agreement to advance molten salt reactors

8 February 2024 – Paris – Two European companies pioneering in molten salt reactors, NAAREA – founded in Paris, France and Thorizon – founded in Amsterdam, the Netherlands signed a strategic partnership agreement to advance the development of molten salt reactors in Europe.

Within the six Gen IV reactor technologies, molten salt reactors have superior potential in terms of nuclear fuel sustainability and inherent safety. Both NAAREA and Thorizon envision molten salt reactors as key enablers to a stable, carbon-free and future proof energy system. In this context, NAAREA and Thorizon have decided to join forces to accelerate the development in molten salt reactors in Europe. In scope of this industrial partnership, the companies will pool their resources in their technology development knowledge to build a roadmap for experimental research and develop shared test facilities. This strategic molten salt cooperation completes the recent strategic and industrial partnership launched by NAAREA and *newcleo* to optimize, thanks to fast neutrons technologies, the re-use of spent fuel from conventional reactors, ensuring complete closure of the fuel cycle. It also complements Thorizon's partnership with Orano to develop a production process for the re-use of spent fuel.

Concretely, the partnership between NAAREA and Thorizon aims to create the best conditions to:

1. Pool resources for safety and security demonstrations and chemical, industrial and strategic knowledge in molten salt technology.
2. Develop shared laboratories and test facilities.
3. Secure access to reprocessed fuel materials needed for molten salt fuel synthesis.
4. Provide the market with a range of complementary energy solutions with a common technology basis.
5. Increase political and public support basis for molten salt reactor technology.

Together both companies work for optimal modularity in their design, NAAREA through modular manufacturing, Thorizon through its modular core made of molten salt cartridges produced offsite. This collaboration will ensure a complete cooperation in the development of their two technologies and their specific features: NAAREA with a molten salt fast neutrons microreactor capable of producing both heat and electricity (80 megawatts thermal / 40 megawatts electric), Thorizon with a reactor producing 250 megawatts thermal / 100 Megawatts electric, targeted at large industrials customers and utilities. This industrial partnership will enable NAAREA and Thorizon, and subsequently other players in Europe, to pool their efforts to accelerate innovation in the field of Molten Salt Reactor and gain in efficiency.

Jean Luc Alexandre, founder and CEO NAAREA says « This strategic industrial partnership will allow to speed up the development of molten salt and will create the conditions to build a European champion alliance in fast neutrons molten salt technology for the benefit of decarbonizing urgently our planet. I'm grateful to say that this collaboration will offer new perspectives on recycling spent fuels from conventional reactors. Thorizon has extensive expertise and has been working on their technology for many years, which is a strong asset for our partnership ».

Kiki Lauwers, CEO Thorizon adds "Building an innovative reactor is not something you can do on your own, this requires strong partnerships and strong teamwork. We opened an office in Lyon to connect to the rich nuclear experience and expertise in France. Now with this partnership with Naarea, we can leverage the French and Dutch ecosystems for the development and go to market of molten salt technology in Europe. I see a mutual commitment to bring the molten salt reactor to the market urgently and a strong willingness and open mindset to share know how to advance this course".

About NAAREA :



NAAREA (Nuclear Abundant Affordable Resourceful Energy for All) was founded in 2020 by Jean-Luc Alexandre and Ivan Gavriloff to help meet the objectives of energy sovereignty, decarbonization and improving the energy mix. NAAREA is developing a groundbreaking energy solution that will completely close the fuel cycle: the XAMR® (eXtrasmall Advanced Modular Reactor), a molten salt fast neutron microreactor capable of producing electricity (40 megawatts electric) and heat (80 megawatts thermal) that will burn plutonium and the most highly radiotoxic waste (with a lifetime of over 100,000 years) produced by nuclear power plants. The XAMR® is designed to be industrially mass-produced and installed in close proximity to consumers, namely in the mobility sector, electro-intensive industries and remote areas. NAAREA benefits from the support of the French Alternative Energies and Atomic Energy Commission (CEA) and French National Centre for Scientific Research (CNRS), as well as industry players such as Assystem, Dassault Systèmes, Orano. A carbon-free and nonintermittent energy source planned to be on the market by 2030, the NAAREA XAMR® is opening the way for sustainable and innovative nuclear energy that supports energy independence, increased resilience and the circular economy. NAAREA is a winner of the “Innovative Nuclear Reactors” call for proposals under the France 2030 investment plan and a beneficiary of the French Tech 2030 support programme.

Learn more at: www.naarea.fr

NAAREA press contacts :

Publicis Consultants

Sylvain Drillon: sylvain.drillon@publicisconsultants.com - (+33)6 44 71 35 68

Lucie Bonilla: lucie.bonilla@publicisconsultants.com - (+33)6 74 77 27 22

About Thorizon :

Thorizon has rapidly evolved from a spin-off of NRG (Dutch producer of medical isotopes and operator of the High Flux Reactor in the Netherlands) into an ambitious deeptech startup, with offices in Amsterdam and Lyon. The company views small modular nuclear reactors as an ideal, stable, and clean contributor to an energy system where wind and solar are the other important sources. The ambition is to develop a reactor based on molten salt that is smart, safe and circular: it can be realized rapidly and in a smart way, is even safer than existing plants, and takes a first step towards circularity. The Thorizon concept is unique due to its patented cartridge-based core. The Thorizon One will provide 250MW of industrial heat which can be directly used in industrial processes (e.g., chemical industry or hydrogen production) or can be transformed into electricity for 250.000 households. Thorizon is working to further strengthen its financial position after a fundraise of € 12.5mln in 2022, to be able to build a non-nuclear molten salt demonstrator in the short term and finalize the detailed design for a first of a kind reactor to be built by 2030: the Thorizon One. Thorizon targets partnerships to accelerate its development, and aims to expand the ecosystem to France from the newly opened office in Lyon.

For more information about Thorizon, you can visit www.thorizon.com.