

PRT-HXN-24-0021 rév. A

Thomas Jeannoutot (Head of synthesis cell)
23rd April 2025

A project developed by visionary & experienced leaders





Sylvain Nizou CEO

Engineer, PhD - Business Developer



Expertise: circular carbon economy, decarbonization of industries



Strategic partnerships development Initiator of **10 patents**













Paul Gauthé CTO

Engineer - 15 years' experience in advanced nuclear reactors design, operation of the Phénix reactor

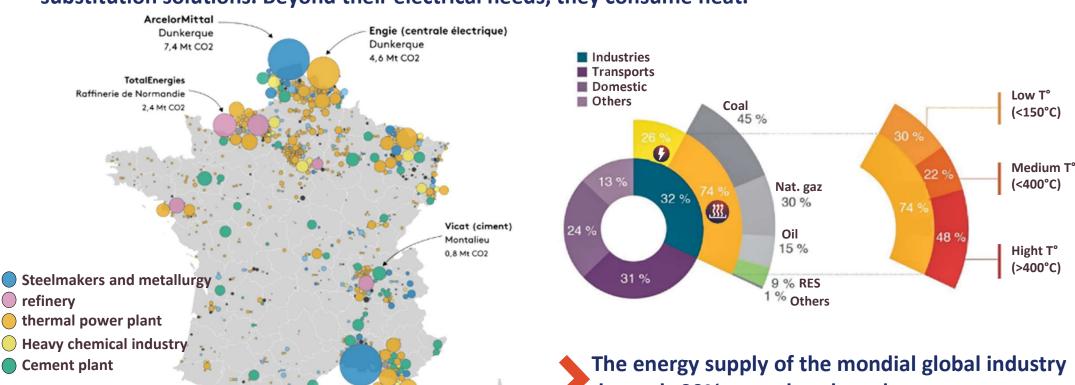
Sodium-cooled Fast Reactor (SFR) R&D project manager

Expert in safety and design



Which industries are they and which kind of energy do they need?

Their common point: heavy consumers of fossil resources, without sufficient and credible substitution solutions. Beyond their electrical needs, they consume heat.

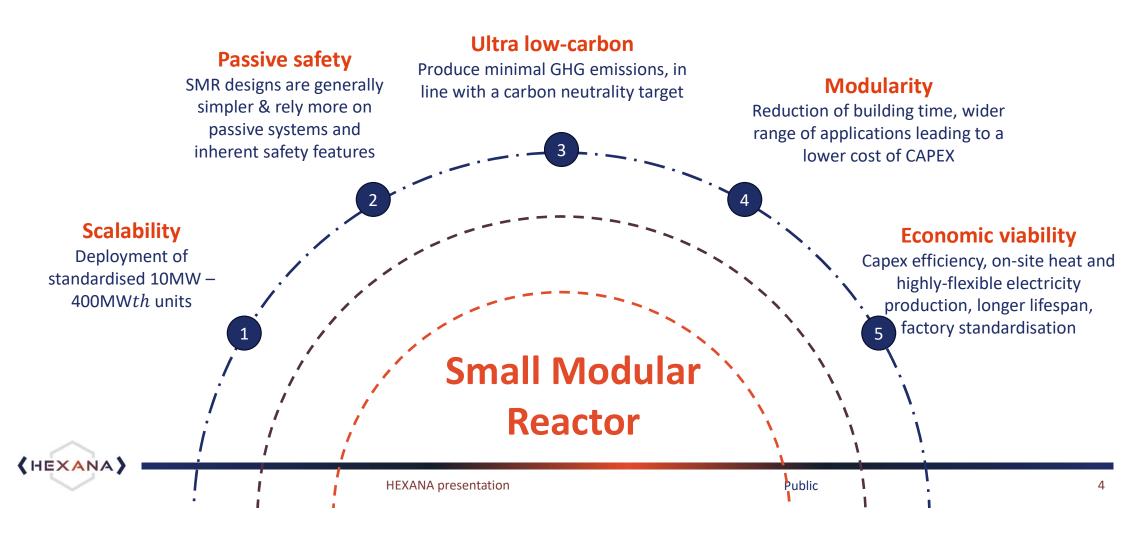


depends 90% on carbon-based sources.

ArcelorMittal Méditerranée

7,7 Mt CO2

The only clean and scalable solution to provide industry with energy is Small Modular Reactors

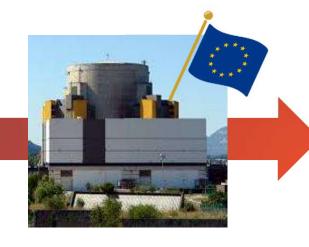


Sodium-cooled fast reactors (SFR): a proven technology









1966 **MASURCA** Critical model ~100 kW

Fast neutron physics

1967 **RAPSODIE Proof of Concept** 40 MWth

Feasibility SFR

1973 **PHENIX Demonstrator** 250 MWe

Qualification of materials, MOX fuel, components, operation, maintenance, power generation

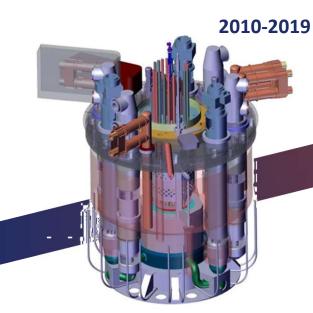
1986 **SUPERPHENIX Industrial FOAK** 1200 Mwe

Industrial feasibility of highpower SFR (construction, operation, dismantling)



Continuing the legacy, but redesigning the reactor to

meet the needs of new applications



ASTRID 1500 MWth

- Industrial demonstrator
- Power reactor concept
- Single objective : Fuel cycle closure



New ASTRID 400 MWth

- Homothetic power reduction compared to ASTRID
- Experimental objective



2021

HEXANA 400 MWth

- Advanced Modular Reactor (AMR)
- Designed to fit new applications
- Competitive in its markets
- Built on the heritage of French and European sodium technology



HEXANA's SFR: the only 4th-generation technology capable of meeting the challenges on time

Favorable technical specifications...

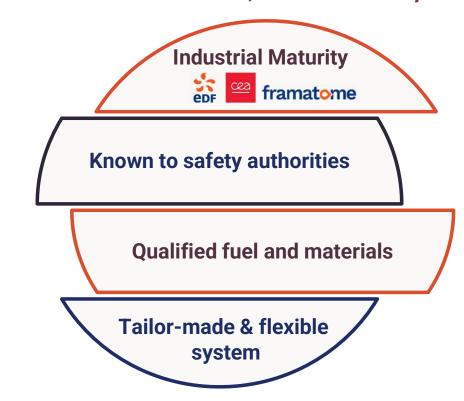
Up to 500 °C

42% electrical efficiency

Reprocessed spent nuclear fuel, optimized waste management

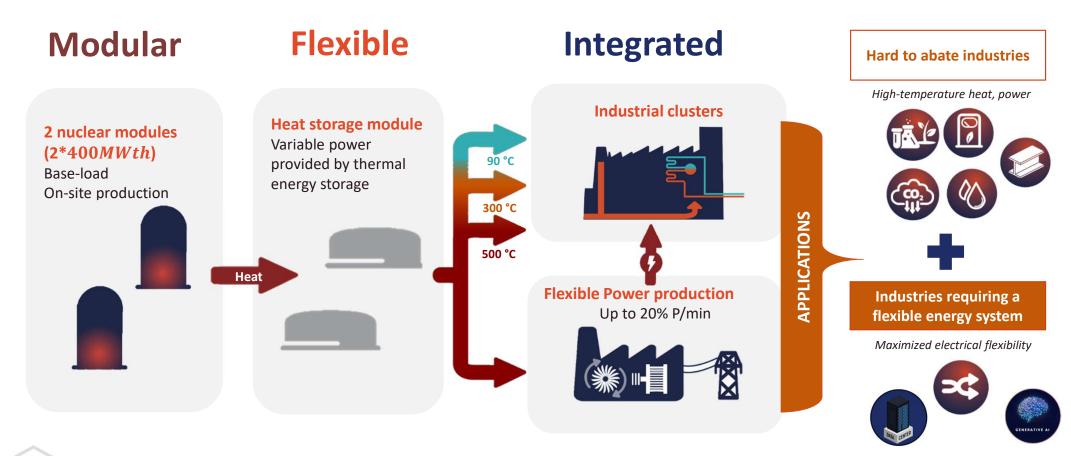
Passive safety

.. and above all a mature, credible industry!



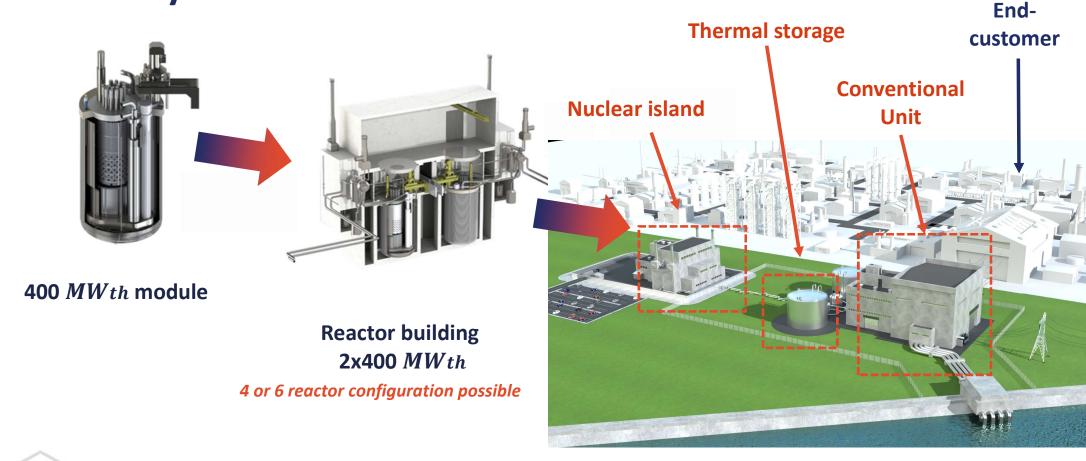


An innovative architecture for modular and flexible energy production





Introducing a tailor-made solution for industry to massively decarbonize





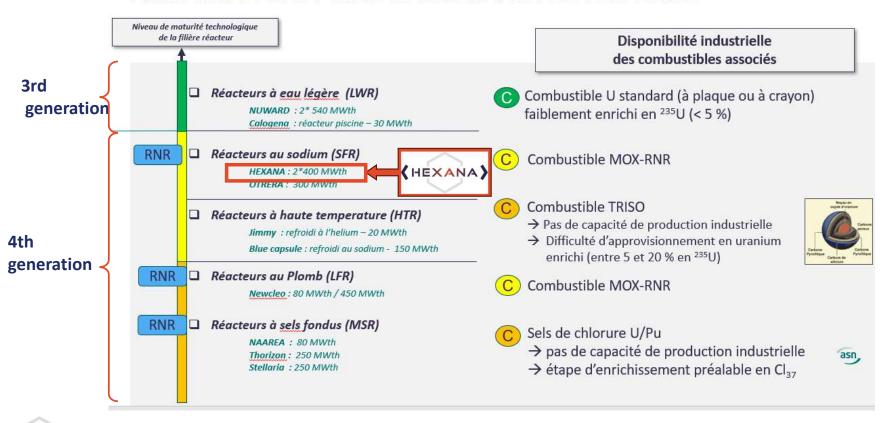
Identified and mature ecosystem already working with us





HEXANA: The most mature reactor within the GEN IV

PANORAMA DES PROJETS DE PRM SUIVIS PAR L'ASN



Source : French Nuclear Safety Authority (ASN)

11



Fast-track project to deploy a first nuclear unit by 2035









Application for authorization



Early deployment on some identified industrial sites

European and global ramp-up

2024

2026

file

2030

unit 2035+

2050

Design

Secure French state grant plant

Development of background and foreground IP

Derisking studies

Industrialisation

Basic design

Permitting

Setting up the MOX supply chain

Permitting commercialisation

Industrial engineering

Detailed engineering

Building the end-to-end industrial chain

Factory assembly

EPC and OEM

EPC and **OEM** contracts with large industrial players

Potential JV creation associated with binding power purchase agreement to generate long term revenue

Fundraising from private and public investors





- A credible alternative to fossil fuels for industry decarbonization
- Reviving the sodium-cooled breeder industry
- Committed to close the nuclear fuel cycle for a sustainable nuclear

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