

FRENCH ASNR, NUCLEAR SAFETY AND RADIATION PROTECTION AUTHORITY: SAFETY CONSIDERATIONS ON SMRs

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ASNR, THE FRENCH NUCLEAR SAFETY AND RADIATION PROTECTION AUTHORITY, IS AN INDEPENDENT ADMINISTRATIVE AUTHORITY CREATED ON JANUARY 1, 2025.

Its creation was provided for by Law no. 2024-450 of May 21, 2024 on the organization of the governance of nuclear safety and radiation protection to meet the challenge of revitalizing the French nuclear industry.



A BRIEF REMINDER OF ASN AND IRSN

ASN: an independent administrative authority since 2016



- An independent administrative authority acting independently of operators and government
- A single mission: to ensure the oversight of nuclear safety and radiation protection in order to protect people and the environment
- Not responsible for the security of nuclear facilities or safeguards
- ASN reported directly to Parliament and the public

IRSN: an external TSO established in 2002



- Independent from ASN
- Expertise and research activities for national / international bodies
- Responsible for the security of nuclear facilities or safeguards
- IRSN reported to 5 ministries

THE MERGER OF ASN AND IRSN

- As part of a new nuclear policy, the government planned to review the governance of nuclear safety, in particular by merging the ASN and most of the IRSN
 - ✓ Law of 22 June 2023 speeding up procedures for the construction of new nuclear facilities near existing nuclear sites and for the operation of existing facilities
 - ✓ Law of May 21, 2024: Reorganisation of the nuclear safety and radiation protection governance
- The new regulator supports inspection/authorisation and TSO activities: Autorité de Sûreté Nucléaire et de Radioprotection (ASNR) from 1 January 2025
- The ASNR covers all regulatory, control, expertise and research activities
- A staff of 2,106 (including 307 inspectors)
- All the activities of the IRSN, with the exception of passive dosimetry and nuclear defense expertise, were transferred to the ASNR

THE MERGER OF ASN AND IRSN

- **All ASN and IRSN international cooperation agreements are pursued within the ASNR**
- **In the specific case of international expertise activities**, with regard to commercial contracts, including technical/expertise support to regulatory bodies and other governmental and non-governmental bodies:
 - ✓ ASNR has the possibility to provide consultancy services and to carry out technical support missions
 - ✓ ASNR is fully committed to ensuring that these activities will continue and will be developed at the same level of quality within the new framework
- **In the specific case of international research activities:**
 - ✓ ASNR will continue the ongoing cooperation agreements and projects signed and implemented by the IRSN with foreign organizations (safety authorities, governmental research institutes, universities, private entities...). This includes joint research projects, including those under the EU EURATOM and OECD NEA frameworks
 - ✓ In the future, ASNR will be able to conclude new partnership and collaborative research projects and activities with the same high level of scientific excellence

THE COLLEGE (BOARD OF COMMISSIONERS)



Pierre-Marie
Abadie



Géraldine Pina



Olivier Dubois



Jean-Luc
Lachaume



Stéphanie
Guénot-Bresson

As an independent administrative authority, the ASNR is headed by a college of five commissioners.

Its missions:

- ▶ Guaranteeing ASNR's independence
- ▶ Define the Authority's general policy nuclear safety and radiation protection.
- ▶ Making major decisions

PIERRE-MARIE ABADIE	Chairman from 13/11/2024 to 12/11/2030 appointed by the President of the Republic
GÉRALDINE PINA	Commissioner from 12/15/2020 to 12/09/2026 appointed by the President of the Republic
STÉPHANIE GUÉNOT BRESSON	Commissioner from 10/12/2023 to 09/12/2029 Appointed by the President of the Republic
OLIVIER DUBOIS	Commissioner from 01/29/2024 to 12/09/2029 appointed by the President of the Senate
JEAN-LUC LACHAUME	Commissioner from 21/12/2018 to 09/12/2026 appointed by the President of the National Assembly

5 members appointed by decree

- ▶ Full-time position
- ▶ Non-renewable 6-year term

SMR PROJECTS CURRENTLY BEING DEVELOPED IN FRANCE



Light Water Reactors LWR

nuward SMR



High Temperature Reactors HTR

Jimmy

BLUE
CAPSULE



Sodium Fast Reactors SFR



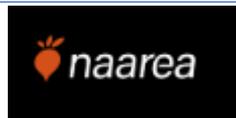
otrera



Lead Fast Reactors LFR



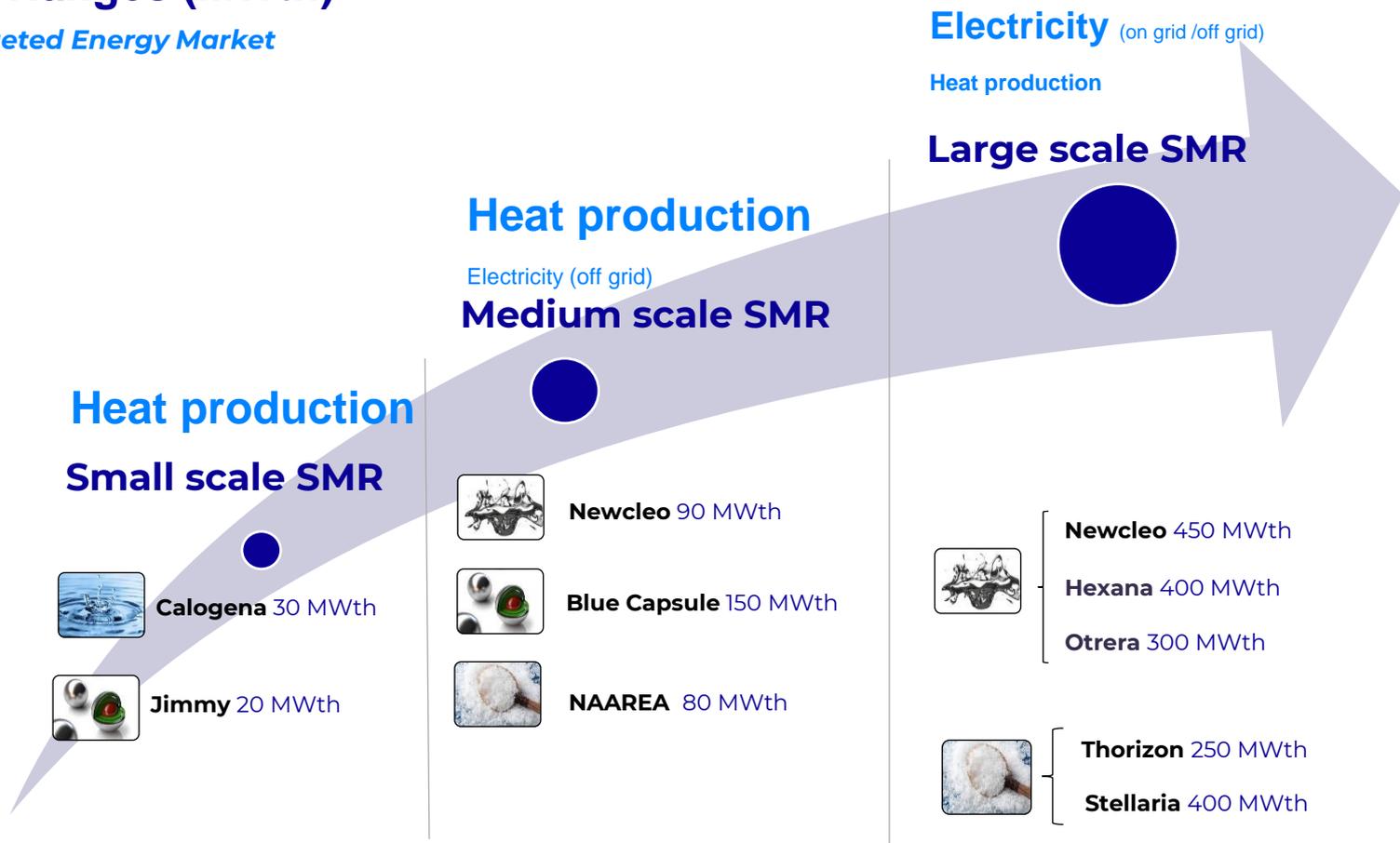
Molten Salt Fast Reactors MS(F)R



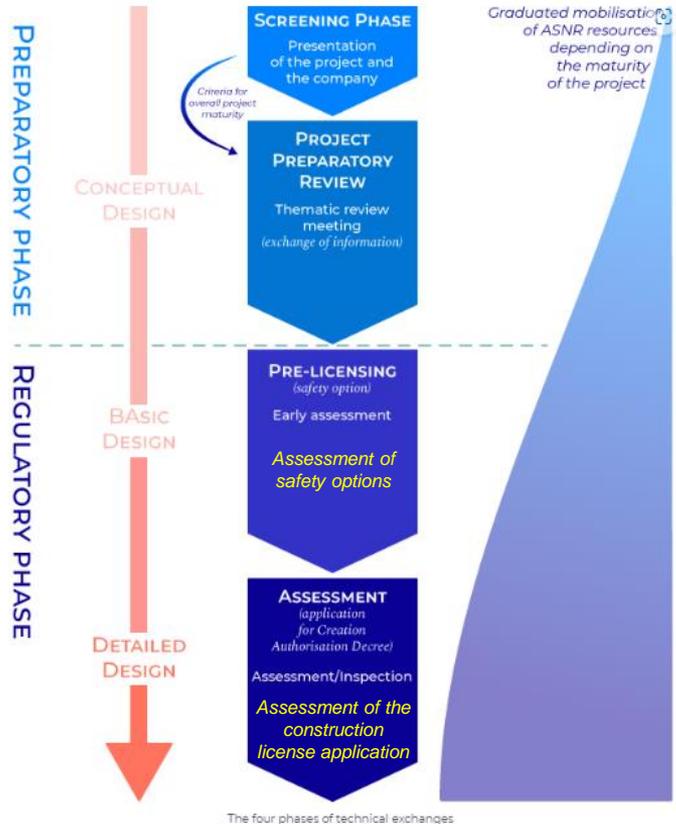
THORIZON

Power Ranges (MWth)

Main Targeted Energy Market



TECHNICAL DIALOGUE AND ASSESSMENT PROCEDURES



A four-phase framework of incremental technical exchanges was set up to:

- Optimize preparations for future license applications (many different designs and technologies, new companies)
- Mobilize ASNR resources proportionate to the level of development maturity of each project

PROGRESS OF DISCUSSIONS WITH THE VENDORS (AS OF JANUARY 2025)



REGULATORY PROGRESS



ASNR Autorité de sûreté nucléaire et de radioprotection

NPP Division
Innovative Reactors Division

Advisory Society Group

Draft revised safety objectives for new reactors

*Work in progress
Expected to be submitted to Board of Commissioners by June 2025*



ASNR's proposal for safety objectives

ASNR College

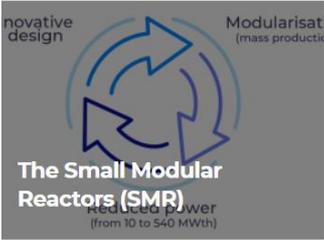
Consolidated Draft safety objectives

ASNRR'S WEBPAGE DEDICATED TO SMR

<https://www.french-nuclear-safety.fr/inspection/small-modular-reactors>

Small Modular Reactors (SMR)

ASNRR ensures the oversight of all French nuclear facilities. Several small modular reactor (SMR) projects are currently being developed around the world. Faced with the challenges of developing these nuclear reactors, ASNRR has set up an organisation to examine projects in France.



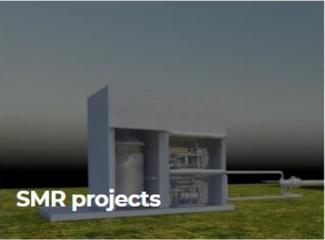
novative design
Modularisation (mass production)
The Small Modular Reactors (SMR)
Reduced power (from 10 to 540 MWe)

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Project developers
Project located close to the population
Feasibility of reducing the consequences in the event of an accident
Definition of reinforced
ASNRR

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THANK YOU FOR YOUR ATTENTION!

БЛАГОДАРЯ ВИ ЗА ВНИМАНИЕТО!

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