

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

JEAN-RENÉ JOURDAIN  
EXECUTIVE DIRECTOR, INTERNATIONAL SERVICES

**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  
Guénat-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

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



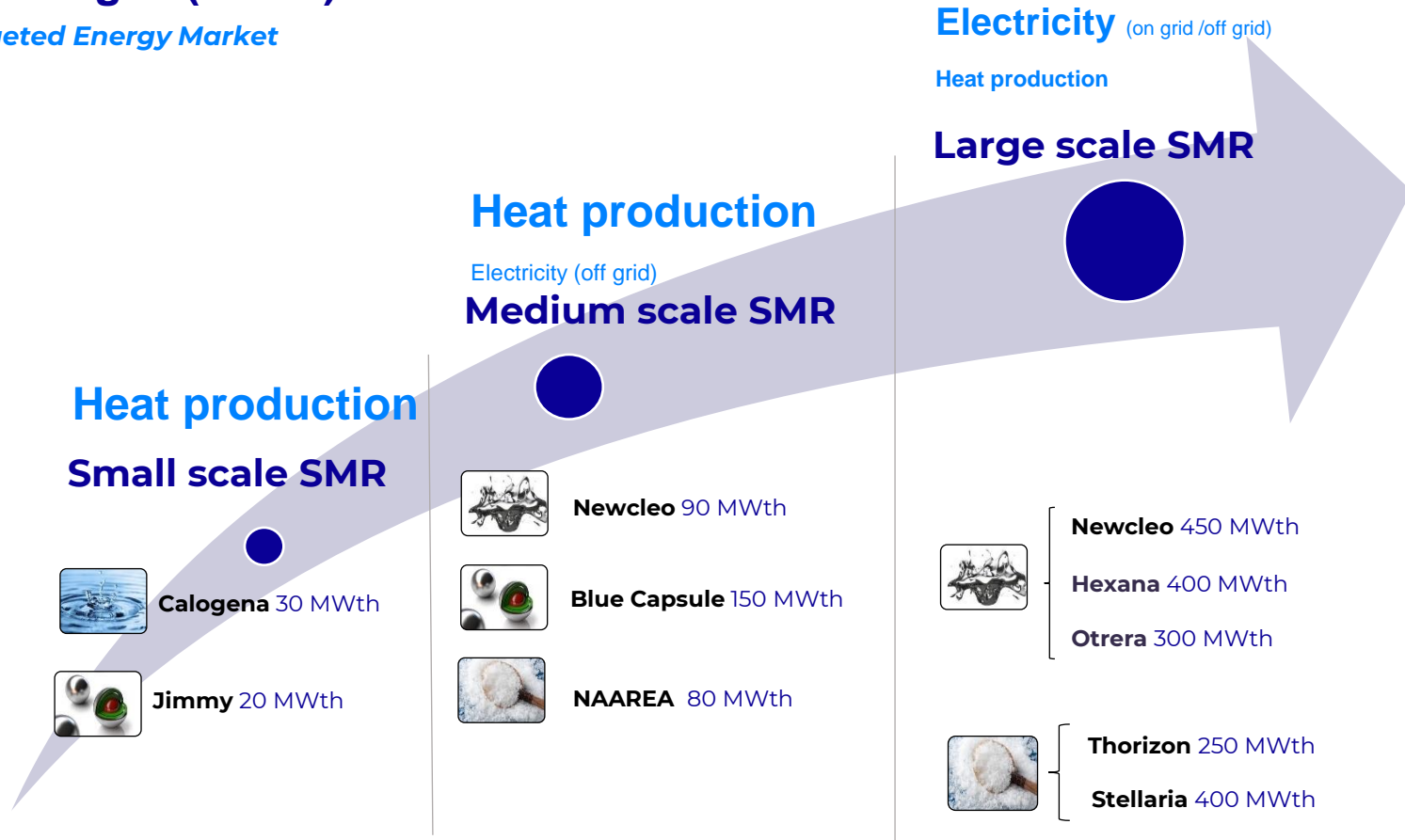
Molten Salt Fast Reactors MS(F)R



THORIZON

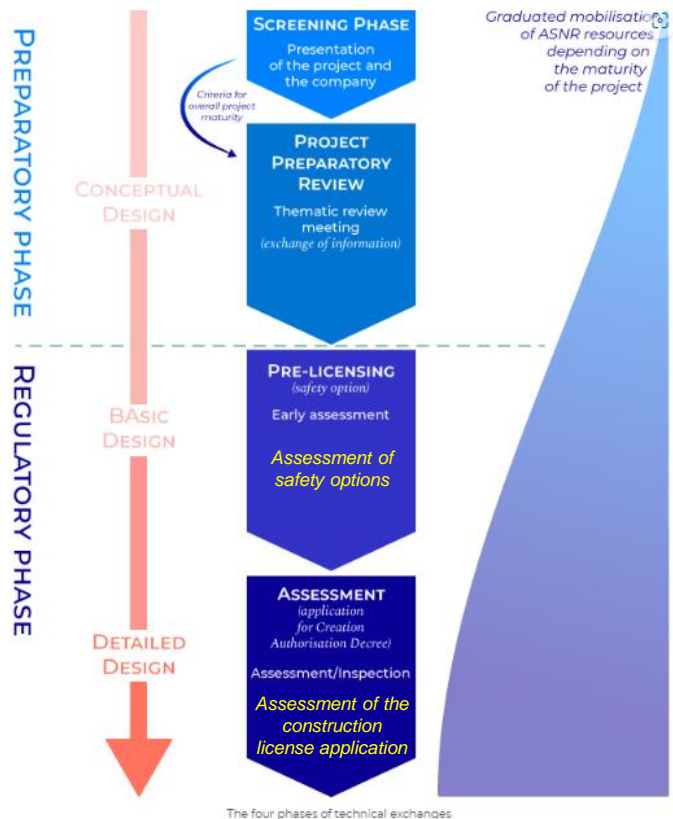
# Power Ranges (MWth)

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



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*

Consolidated  
Draft safety  
objectives

ASNR  
College

ASNR's  
proposal for  
safety  
objectives

SÉNAT

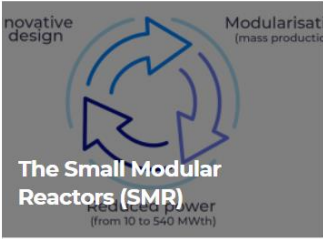


# ASN's WEBPAGE DEDICATED TO SMR

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

## Small Modular Reactors (SMR)

ASN 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, ASN has set up an organisation to examine projects in France.




### The Small Modular Reactors (SMR)

Reduced power (from 10 to 540 MWe)

**Table of contents**

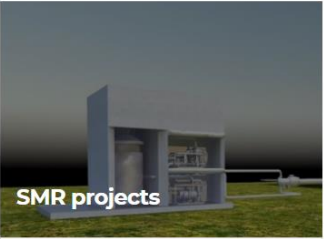
- Definition >
- Background to the emergence of SM... >
- The different SMR sectors in France >
- Fuel cycle for SMR >



### ASN adapts to innovative SMRs

**Table of contents**

- Safety objectives >
- Dialogue and assessment procedures >
- Standardisation and international ... >



### SMR projects

**Table of contents**

- Overview of current projects >
- Status of technical exchanges on ... >
- SMR news >

**THANK YOU FOR YOUR ATTENTION!**

**БЛАГОДАРЯ ВИ ЗА ВНИМАНИЕТО!**

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

JEAN-RENÉ JOURDAIN  
EXECUTIVE DIRECTOR, INTERNATIONAL SERVICES

[jean-rene.jourdain@asn.fr](mailto:jean-rene.jourdain@asn.fr)  
+33 1 58 35 87 67 / +33 6 70 30 77 20