



Tavola Rotonda per Studenti di Ingegneria Nucleare

Energy Days – UniBo

In collaborazione con ENEA

Bologna, 12 Maggio 2023

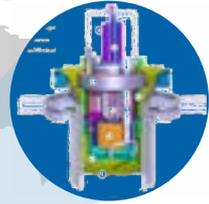
AMR
Wolverhampton
UK
2020-2022



MYRRHA
Mol
Belgium
2013 - 2016



CLEAR-I
Hefei
China
2017-2019



AP1000
Pittsburgh
USA
2010 - 2012



Alma Mater
Studiorum
Bologna
1998 - 2006



ALFRED
Pitesti
Romania
2021-2023



Michele Frignani

Head of Unit
Innovation, Proposal and Tech. Integration

ansaldo nucleare

Ansaldo Nucleare in a snapshot

Since 1966, Ansaldo Nucleare (formerly Ansaldo Meccanico Nucleare) is responsible for the nuclear business in the Ansaldo Energia group.



440
Employees



80 € million
2021 Revenue



150 € million
2021 Backlog



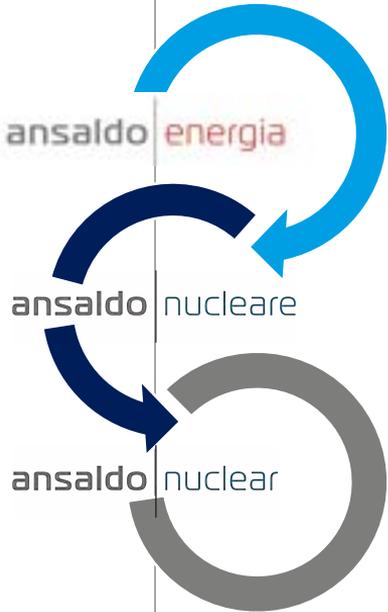
10
R&D&I Projects



42
In-house skills



9000 sqm
Workshops (UK)



Major Nuclear Projects in our Portfolio



**Nuclear
New Builds**



Cernavoda (Romania)
Units 1 & 2 Completion



Sanmen Unit 1 AP1000 (China)
Steel Containment
Vessel - Passive
Residual Heat Removal



ESS (Sweden)
Shield Doors



**Decommissioning
& Radioactive
Waste Manag.**



Sellafield (UK)
Silo Emptying Mobile Caves
(MSSS) Machines



SRP Gloveboxes (UK)
2 manufacturing lines of
gloveboxes for encapsulation of
Pu



Caorso (Italy)
Drum Retrieval Machine



**Services for
Nuclear
Power Plants**



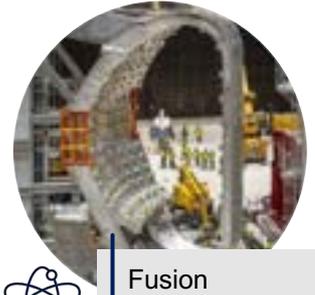
Embalse (Argentina)
PLEX & Diesel Station
Refurbishment



Cernavoda (Romania)
Component Cooling
Upgrade
and Post Fukushima
Evaluations



Krsko NPP
Safety Upgrade Program
Bunkered Building 2
Project



Fusion



ITER (France)
Tokamak Assembly –
TAC2



ITER (France)
Steady state electrical
network – TB13



DTT (Italy)
Engineering (plant,
systems, components)

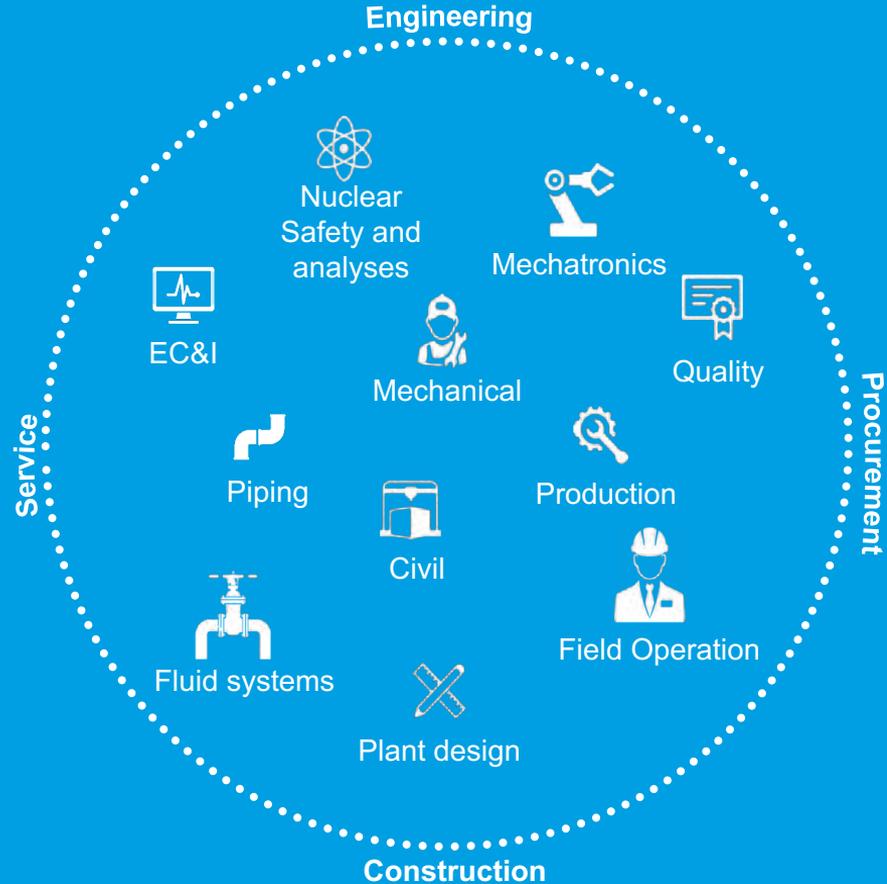
Our In-house capabilities

- QHS&E
- Manufacturing
- Procurement
- Projects
- Engineering
- Central Services (IT, HR, Accounts and Admin)
- Sales, Marketing, Business Development and Tendering

Based in



Technical Disciplines



Short-term

Timely and efficient solutions for the safety upgrade, life extension and dismantling of old plants, accelerating the return to green-field of nuclear sites



Medium-term

Integrate new flexible and more sustainable nuclear power plants, to make the energy transition smoother and cheaper



Long-term

Make fusion available to future energy needs, with the highest sustainability standards for a new source of clean energy



Ansaldo Nucleare's main commitment is to innovate nuclear solutions to protect the planet and power our future

Innovative technologies and products for WM&D

- Cutting, handling, conditioning technologies in a rad-hard environment
- Ansaldo Nucleare has a long tradition in bespoke machine, from concept design to manufacturing
- Cooperation with technology centers keep us at the forefront of robotic innovation in the nuclear field



Mechatronics



- Disposal of radioactive waste in containers for homogeneous and heterogeneous wastes
- Recent qualification of a high integrity container for Intermediate Level Waste
- Manufacturing capacity



Containers



- Competences for EPC contracts in waste management facilities and repositories
- Development of technologies for the wet oxidation of spent resins
- Development of technologies for acid pickling solution and production of vitrified wastes



Waste treatment



Small and Advanced Modular Reactors

Ansaldo Nucleare plays a key role throughout the whole **value chain** (from concept to prototype) as system **integrator** with **manufacturing** capabilities in IT and UK.



Key to success

- **nuclear vendor** possibly engaged both with utilities and policy-makers
- **trans-national marketability** through a high degree of standardization
- **innovative features** for higher competitiveness in an open energy market



Goal

- more **traditional** concepts = shorter time to market
- more **innovative** concepts = higher opportunities for a key role as technology provider

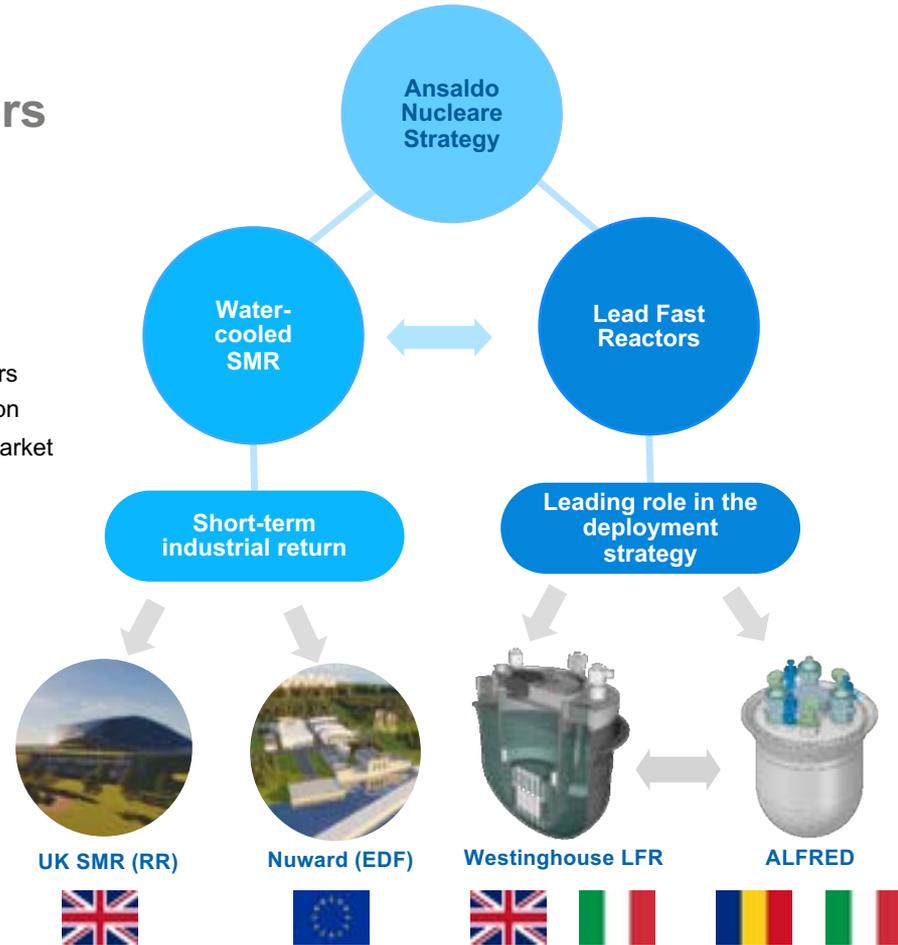


Two-folds strategy

Short-term: **engagement** in concept(s) developed by vendors with higher potential in terms of marketability

Longer-term: **co-developer** of advanced technologies (namely, LFR) based on the demonstrated competences and capabilities

Now: **EPC** of experimental facilities to support demonstration of performances and licensing process.

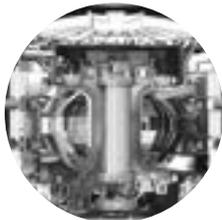
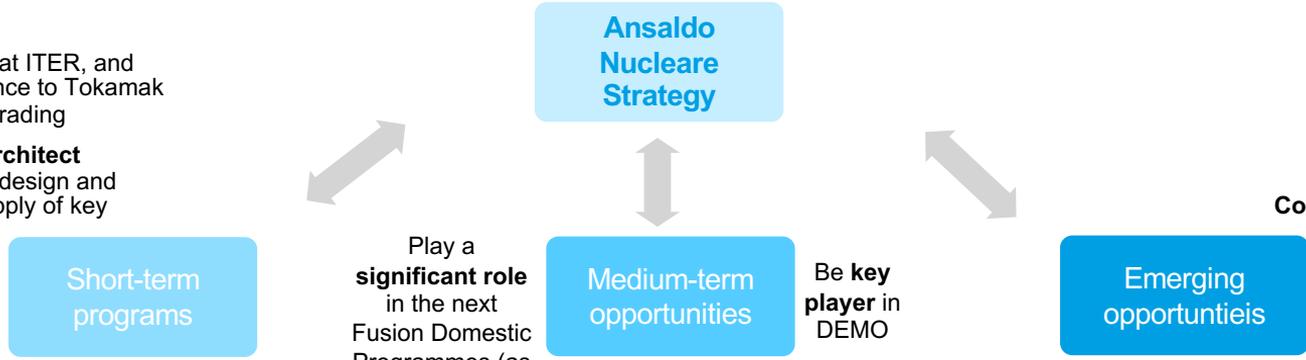


Fusion mainstream and emerging initiatives

Improve **presence** at ITER, and position for assistance to Tokamak operations and upgrading

Pursue a **role of Architect Engineer** for DTT (design and integration) and supply of key components

Pursue positioning for **Special Component delivery and industrialization** for emerging opportunities



ITER



DTT



STEP



DEMO



SPARC



General Fusion



At the forefront of nuclear innovation



Mechatronics



Containers



Treatments plant



LFR



SMR

Plasm facing components

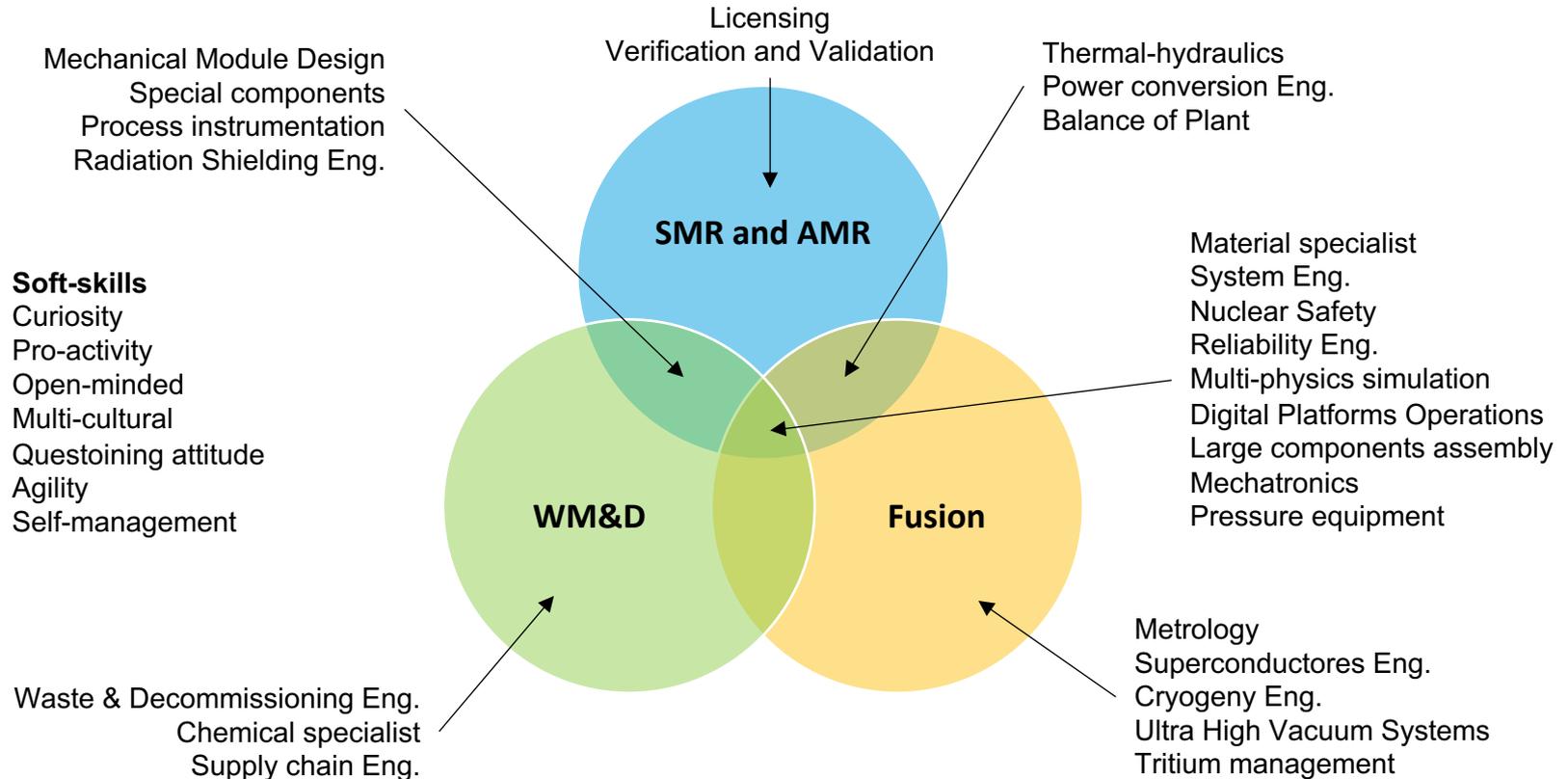


High-tech

From cradle to site



Skills





**Thank you for your participation
Grazie!**