



2023 May 9

Two motions (1 from gov.m.t + 1 from part of the opposition) «in favour» of nuclear energy, approved by Italian Parliament (only 16% of voters against)



2023 Jul 20

“Nuclear in Italy: Scenarios and Perspectives” workshop hosted by Italian Parliament Lower Chamber, all main stakeholders attended the event (utilities, industries, institutions)



2023 Sept 12

Minister of Environment and Energy Security,, Sen. Pichetto Fratin, launched the «National Platform on Sustainable Nuclear», 7 WGs



2023 Oct 11

Ministers:
• Environment and Energy Security,
• Infrastructures,
• Industry

To provide in 9 months a document («roadmap») to the Italian Government for a national civil nuclear programme

WG 1: context, energy scenarios, perspectives

WG 2: fission technologies

WG 3: fusion technologies

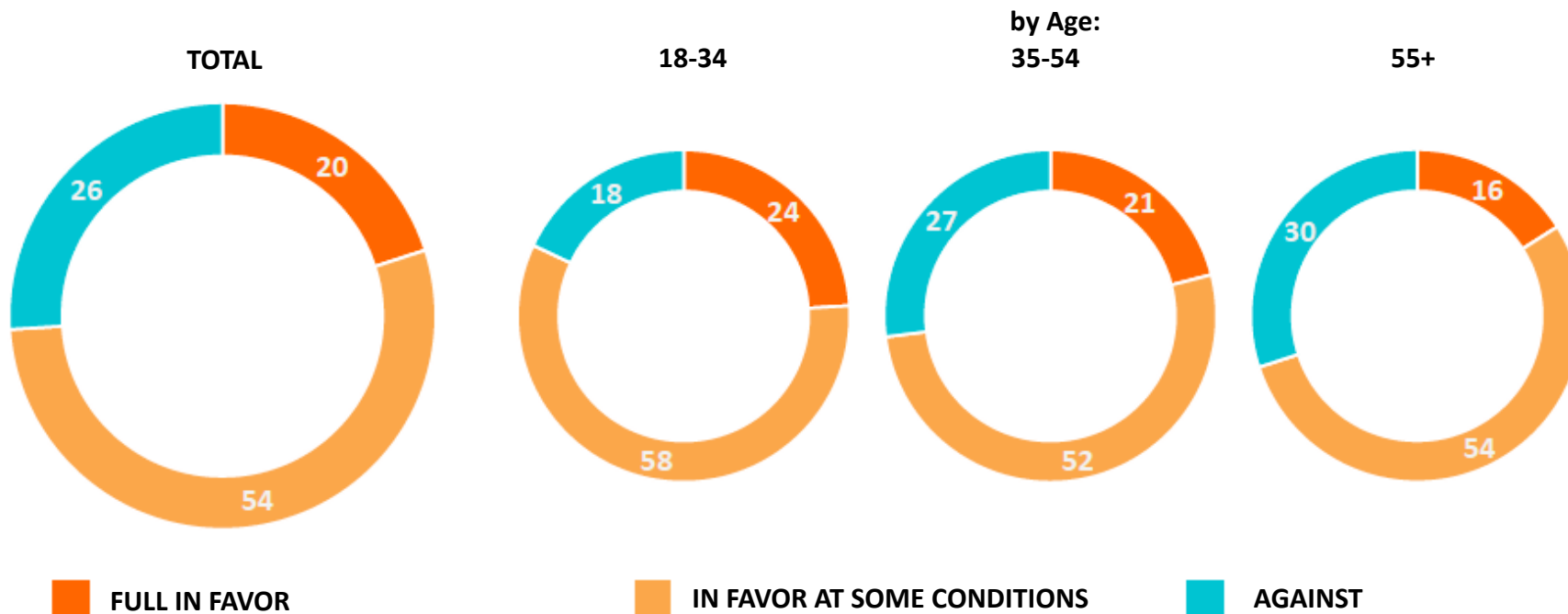
WG 4: safety and prevention, law/regulation, certification

WG 5: nuclear waste & decommissioning

WG 6: education & training

WG 7: cross cutting items (environment, public engagement, media, ...)

National Civil Nuclear programme – Italy?... Italy!

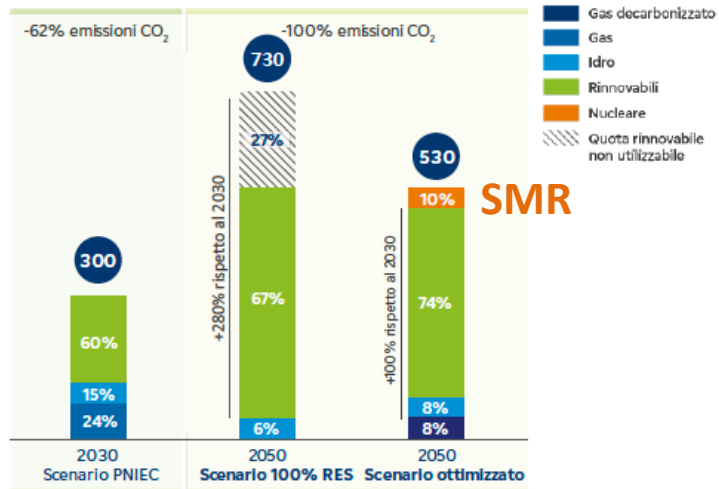


- Study on SMRs/AMRs for Italy: presentation to Minister of Environment and Energy Security (12.sept.2023) «NEW NUCLEAR IN ITALY: WHY, HOW, WHEN»



Nuovo nucleare e gas decarbonizzato a supporto delle rinnovabili per la neutralità carbonica al 2050

Evoluzione Italiana del mix di produzione¹ (TWh)



- Il **nuovo nucleare**, insieme alle rinnovabili, contribuisce al raggiungimento della **neutralità carbonica al 2050**
- Lo **Scenario Ottimizzato con rinnovabile, nucleare e produzione a gas decarbonizzato** consente il raggiungimento dei target di decarbonizzazione al 2050 con una riduzione degli investimenti pari a **circa 400 Miliardi€**

- Italy as observer in the **European Nuclear Alliance**
- **Italian stakeholders very interested in EU SMR Partnership/Industrial Alliance**
- **Leadership in EU about LFR technologies:** ALFRED (Ansaldo Nucleare, ENEA, Raten), Newcleo; world class experimental labs
- **2022-2023: Energy Intensive associations/companies** (e.g. steelers) + Ansaldo Nucleare started discussions for PPA & financing PLEX/new build in Slovenia and Romania
- **Q4 2022:** Letter of Intent-Lol Ansaldo Nucleare + Ansaldo Energia + Edison + EdF on **small modular water-cooled reactors** (notably Nuward)
- **2023: SIET Company (exp. labs)** based in Piacenza is building/running a number of SMR-related experimental facilities (Nuscale, Rolls Royce, etc.); potential “open access” large scale facility on SMR (for EU Safety Authorities?...)

2023.Jul.19: Position Paper by AIN Italian Nuclear Association

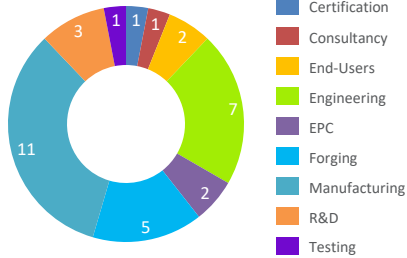
Two main complementary and interconnected measures:

- **Short term impact (by 2030):** broader participation to nuclear projects and initiatives **abroad** with the aim to dramatically increase industrial participation to **EU nuclear supply chain**, and possible **import of a few GWe** of green energy produced by NPPs in neighbouring countries to the benefit of large Italian consumers (PPA)
- **Medium-long term impact (measure to be started right away):** strengthening the 19 material and immaterial infrastructure elements to allow possible **construction of advanced NPPs** in the country **around 2030** (*first phase of IAEA Milestone Approach customized to Italian case and current situation*)

Strong recommendation to the Government to create a **NEPIO Nuclear Energy Program Implementing Organization** to sustain and coordinate nuclear programme



Italian Nuclear Supply Chain For SMR (2nd meeting)



- Certification
- Consultancy
- End-Users
- Engineering
- EPC
- Forging
- Manufacturing
- R&D
- Testing

ansaldo energia



National Civil Nuclear programme – Italy?... Italy!



ITALIAN NUCLEAR SUPPLY CHAIN FOR SMALL MODULAR REACTORS

Preliminary investigation and Case Study on Large Components manufacturing
(Case #1: Reactor Pressure Vessel)

prof. Marco E. Ricotti



C O N T R A T T I

Cooperazione Internazionale con la Ricerca Tecnologica Nazionale
Sostegno alla Ricerca e Sviluppo per la Ricerca e Sviluppo Tecnologico Nazionale

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TECHNICAL COMPANY OVERVIEW

Ansald Nucleare brings to the client a single entry point and a single multidisciplinary team that can design, procure and follow up the construction, installation and commissioning of complex projects.

Ansald Nucleare has consolidated its role as EPC contractor managing the integrated design, the supply of nuclear components and their installation in several recent projects in the domestic markets and abroad.

Ansald Nucleare provides tailored design and engineering, manufacturing, assembly, testing, commissioning, on-site installation and integrated logistics services for the following markets: Nuclear plant EPC, New nuclear builds, Fusion, Plant operation assistance.

GIVA GROUP

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80 million €
2021 REVENUES

SIZE OF SUPPLY CONTRACTS IN THE NUCLEAR SECTOR

Ansald Nucleare
A one-stop shop for nuclear power solutions

Ansald Nucleare S.p.A. and its subsidiary Ansald Nuclear Ltd (UK) operate together specializing in nuclear power.

Ansald Nucleare covers all nuclear activities. From the production of critical design and construction of new builds, from decommissioning to advanced management, Fusion, Generation IV plants and Small Modular Reactors, we can

Ansald Nucleare is devoted to the advancement of nuclear technology, enhance public transparency. Safety, security, quality and sustainability guide our vision for the nuclear future, providing carbon-free energy through advanced and modular technologies and composite fusion and fusion reactors.

We believe in a nuclear industry of the future and for the future.

Together, ahead of the game

GIVA – Italian family-owned group founded by Mr. Antonio Vienna in the 1960s – is worldwide leader in manufacturing of steel products as ingots, forgings, valves and actuators. It boasts consolidated know-how, technologies and records, and delivers value to international projects in the construction of large-scale infrastructures, energy systems, plants and machinery.

GIVA controls: **2 steel mills, Nunki Steel and Italford**, integrated into the production process of large-scale infrastructures, energy systems, plants and machinery.

It's a fully integrated network of complementary companies in northern Italy and counts 19 modern and highly specialized production plants, 13 open die forging presses, 6 ring rolling machines and more than 30 manipulators, furnaces and machining centres.

Thanks to its **business-integrated model**, GIVA handles the entire manufacturing process from scrap melting to the final product, guaranteeing full control over quality, timing and cost. The whole network implements a **Quality Management System** according to specific international standards, and days attention to the **ESG Program** as a functional approach to the business.

WE OFFER SERVICES FOR THE FOLLOWING NUCLEAR SECTORS

- Nuclear plant EPC
- New nuclear builds
- SMR
- LFR
- Fusion
- Plant operation assistance
- Decommissioning and Waste Management

30 SMALL MODULAR REACTORS

IN NUCLEAR SUPPLY CHAIN FOR SMALL MODULAR REACTORS

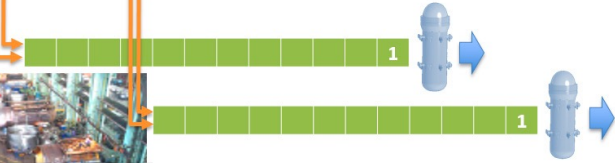
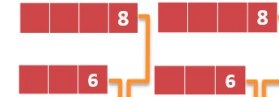
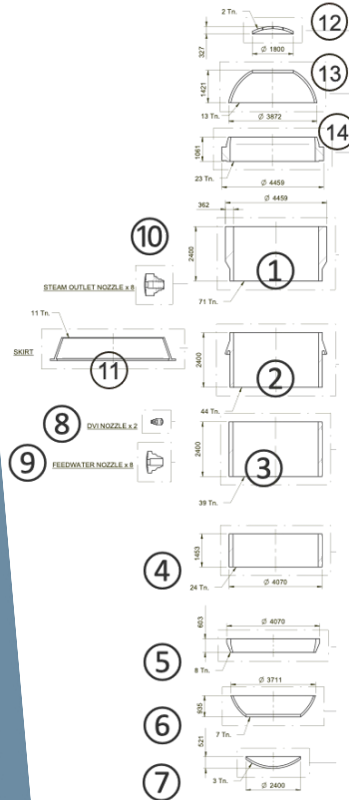
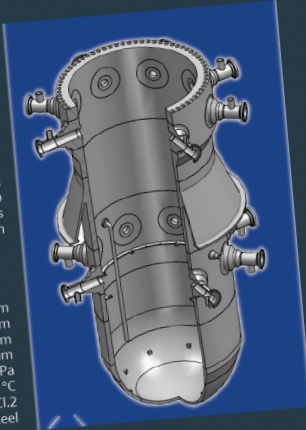
CASE STUDY ON REACTOR PRESSURE VESSEL MANUFACTURING

The Case Study has been developed on the basis of a generic Small Modular Reactor of integral PWR type, with a Reactor Pressure Vessel hosting all the main primary components (Steam Generator modules, Main Recirculation Pumps, Pressurizer, Control Rod Drive Mechanisms).

The RPV accommodates 8 + 8 nozzles for the Steam Generators / Pump connections plus smaller penetrations for the Safety Injection & Shut-down Systems.

RPV Main data:

Overall height	13 500 mm
Inside diameter	3 700 mm
Nominal thickness	170 mm
Min. cladding thickness	6 mm
Design pressure	17.3 MPa
Design temperature	343 °C
RPV material	SA 508, Tp.3, CL2
Cladding material	Stainless steel



Estimated number of Reactor Pressure Vessels for SMR the Italian Nuclear Supply Chain is capable to produce per year.

The italian Tri-Paradox: Education, Research, Industry

EU SMR pre-partnership
Stakeholders' Forum
Brussels
2023.oct.26

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prof. Marco E. Ricotti



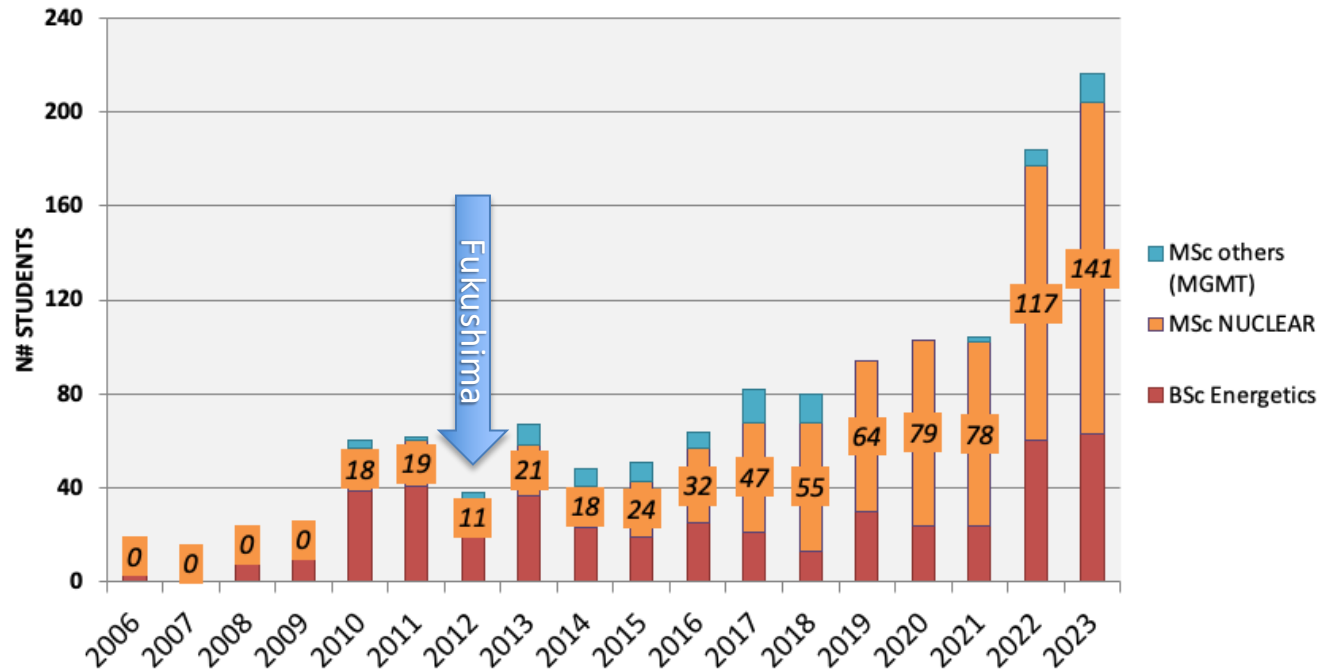
C I R T E C
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Società aderenti: Università degli Studi di Padova, Università degli Studi di Trieste, Università degli Studi di Udine, Università degli Studi di Trieste, Università degli Studi di Udine, Università degli Studi di Trieste, Università degli Studi di Udine

POLITECNICO MILANO 1863

The Italian Tri-Paradox: Education, Research, Industry



POLIMI, "Introduction to Nuclear Engineering" course (10 credits)



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