



INPRO

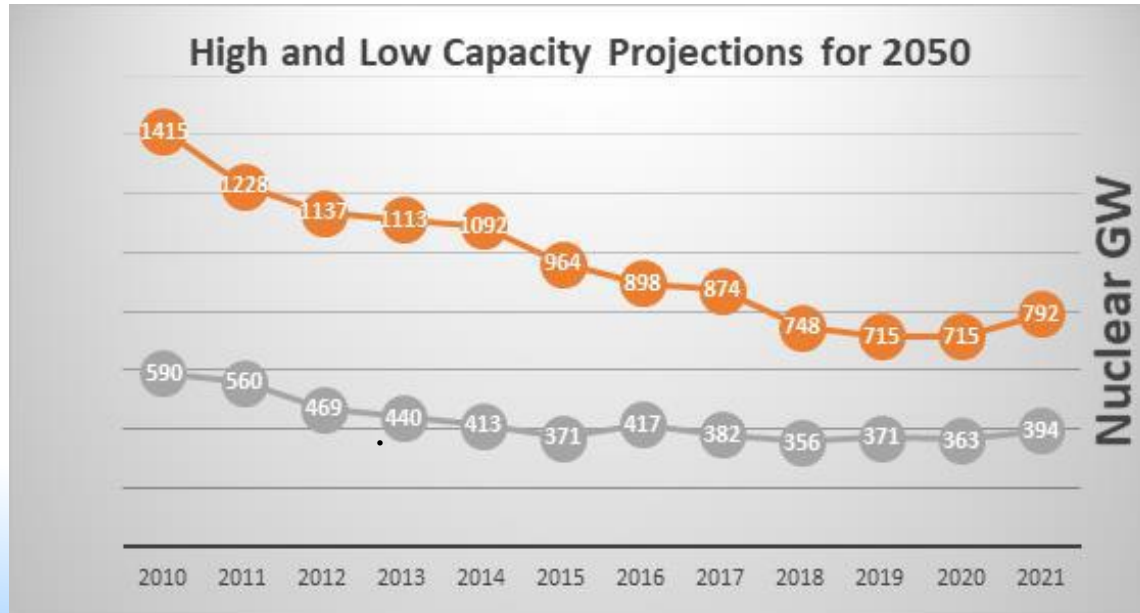
International Project on
Innovative Nuclear Reactors
and Fuel Cycles

Session 2. Nuclear Fusion as an element of future energy systems

Technical Meeting on Synergies Between Nuclear Fusion Technology Developments and Advanced Nuclear Fission Technologies
6-10 June, 2022, Vienna, Austria,

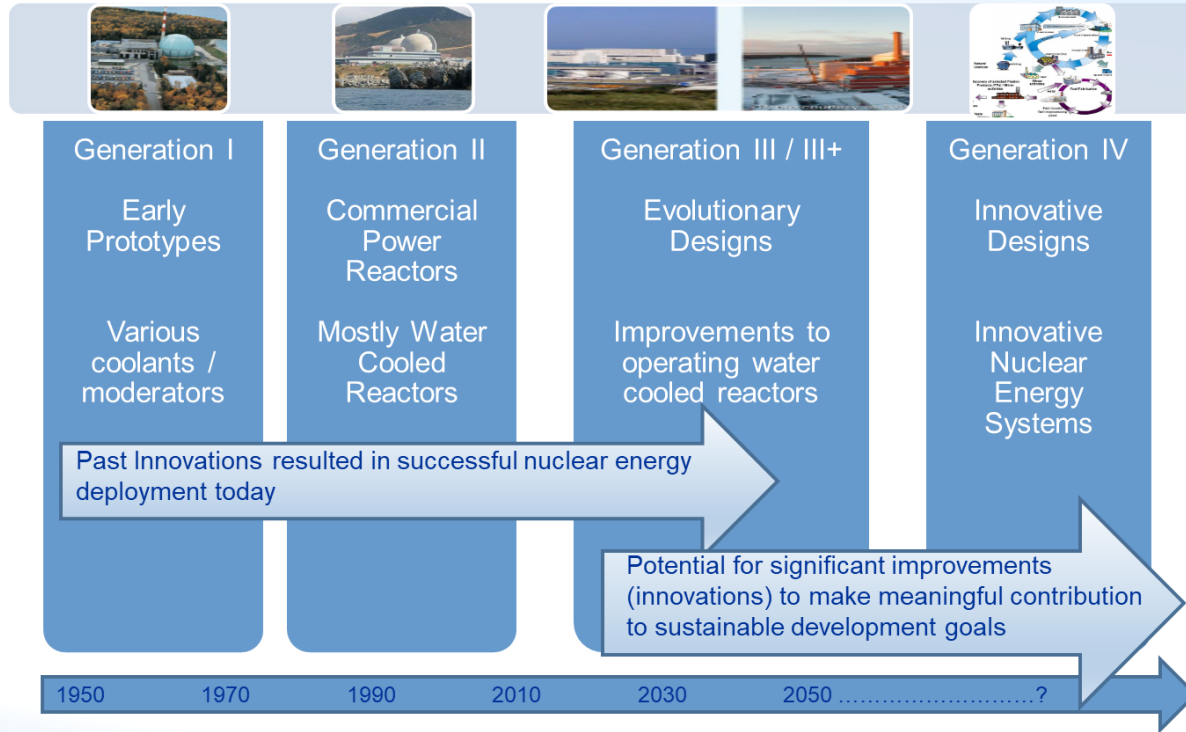
Alexander Bychkov, NENP INPRO Section

Evolution of high and low nuclear power capacity projections for 2050 based on data presented in RDS-1 editions from 2010-2021 (Draft NTR 2022)



IAEA and NEA/OECD do not yet consider fusion as energy source in the projections

Nuclear Power Deployment Evolution



Generation IV International Forum also does not consider fusion as advanced source of energy

INPRO's Global scenarios - SYNERGIES

IAEA Nuclear Energy Series

No. NF-T-4.9

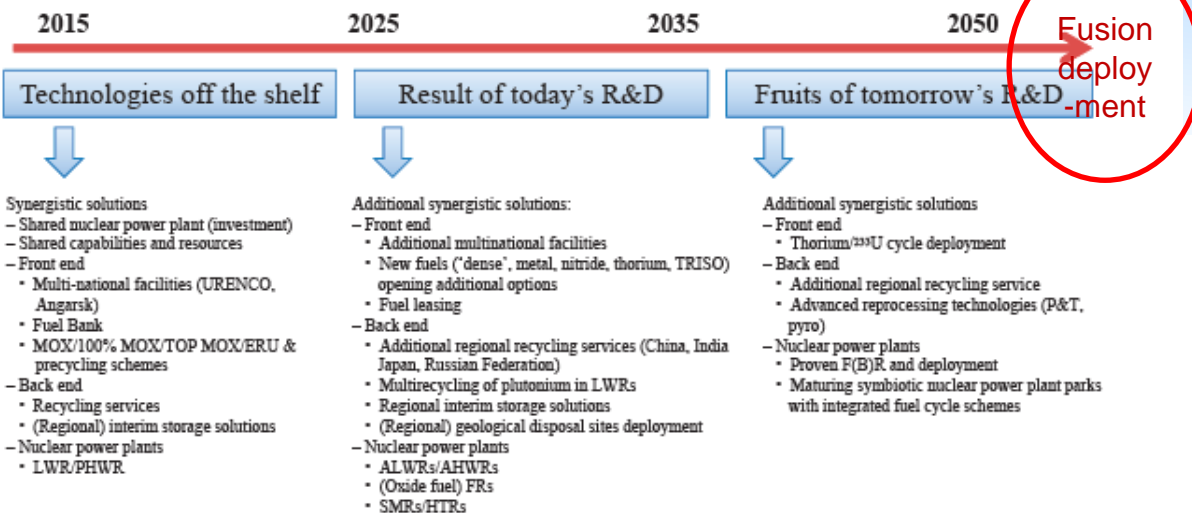
Enhancing Benefits of Nuclear Energy Technology Innovation through Cooperation among Countries: Final Report of the INPRO Collaborative Project SYNERGIES

Basic Principles

Objectives

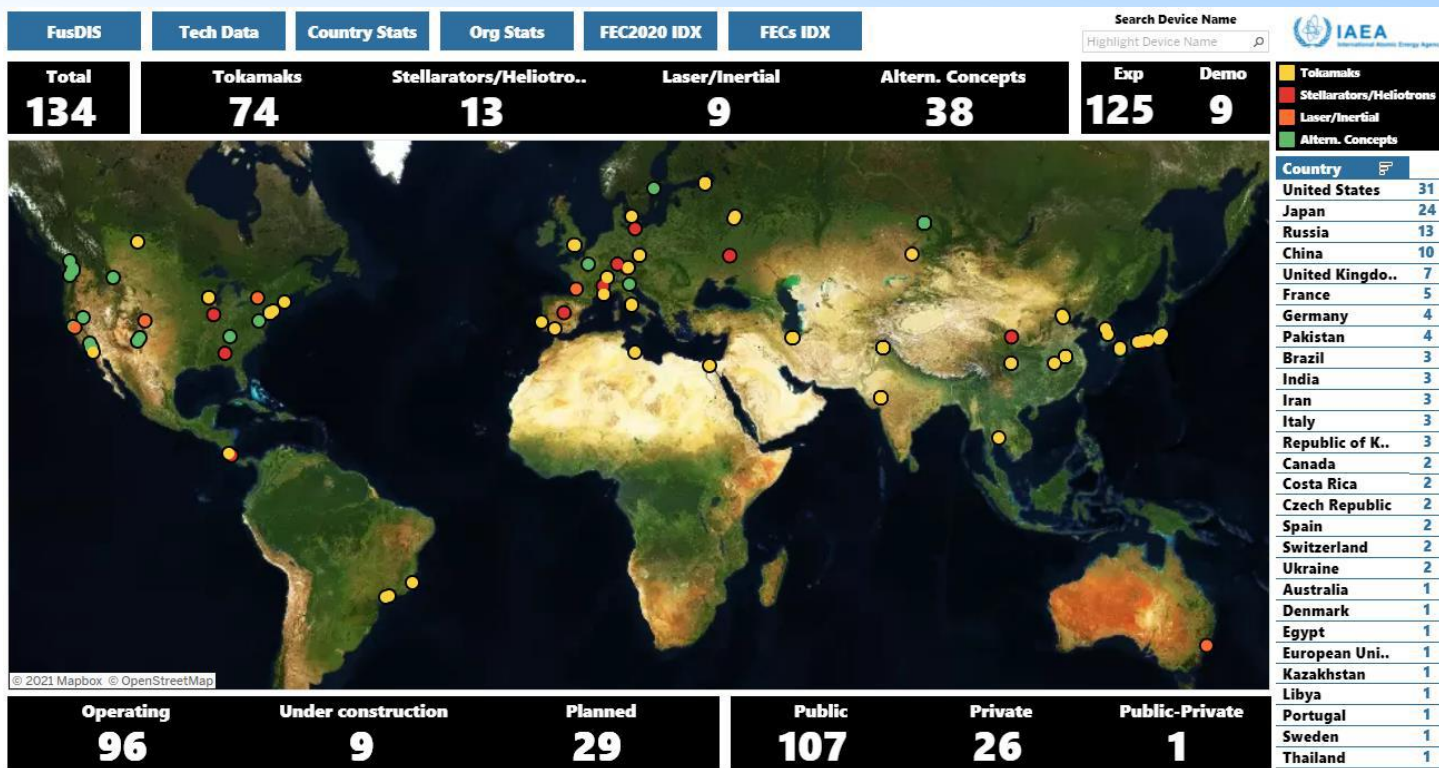
Guides

Technical Reports



INPRO Global Sceneries Studies as usual had time-line in 40-50 years. Till 2020 Fusion did not consider as energy source because of lack of initial data for evaluations

Fusion Strategy as power source should be considered in line with other innovations in energy supply.



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Extensive R&D

↓
Expected
initial data
for “pilot”
evaluations

Over 130 experimental, public and private, fusion devices are operating, under construction or being planned, while a number of organizations are considering designs for demonstration fusion power plants.

(Sources: IAEA Fusion Device Information System, draft NTR-2022)

Beyond of IAEA programs, but useful for further studies



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- Evaluation of risks for new power technologies
- Evolution of electro/power market and demands/supplies
- Progress in the systems for the energy accumulation and efficiency growth
- Possible new aspects for special materials supply and technological breakthroughs

