

VERONICA

Versatile European Reactor for Neutron Irradiation and Nuclear Research

Project update: Stakeholders, Utilization and Preliminary design



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MOTIVATION

- Develop a roadmap for a **new European research reactor in Slovenia**
- Address the **decline of research reactors**
- Support **Europe's transition to a zero-carbon society**
- Aligned with **Draghi report, UN sustainable goals and EU competitiveness compass and nuclear energy goals**: long-term reactor operation and new NPP, SMR and fusion energy developments



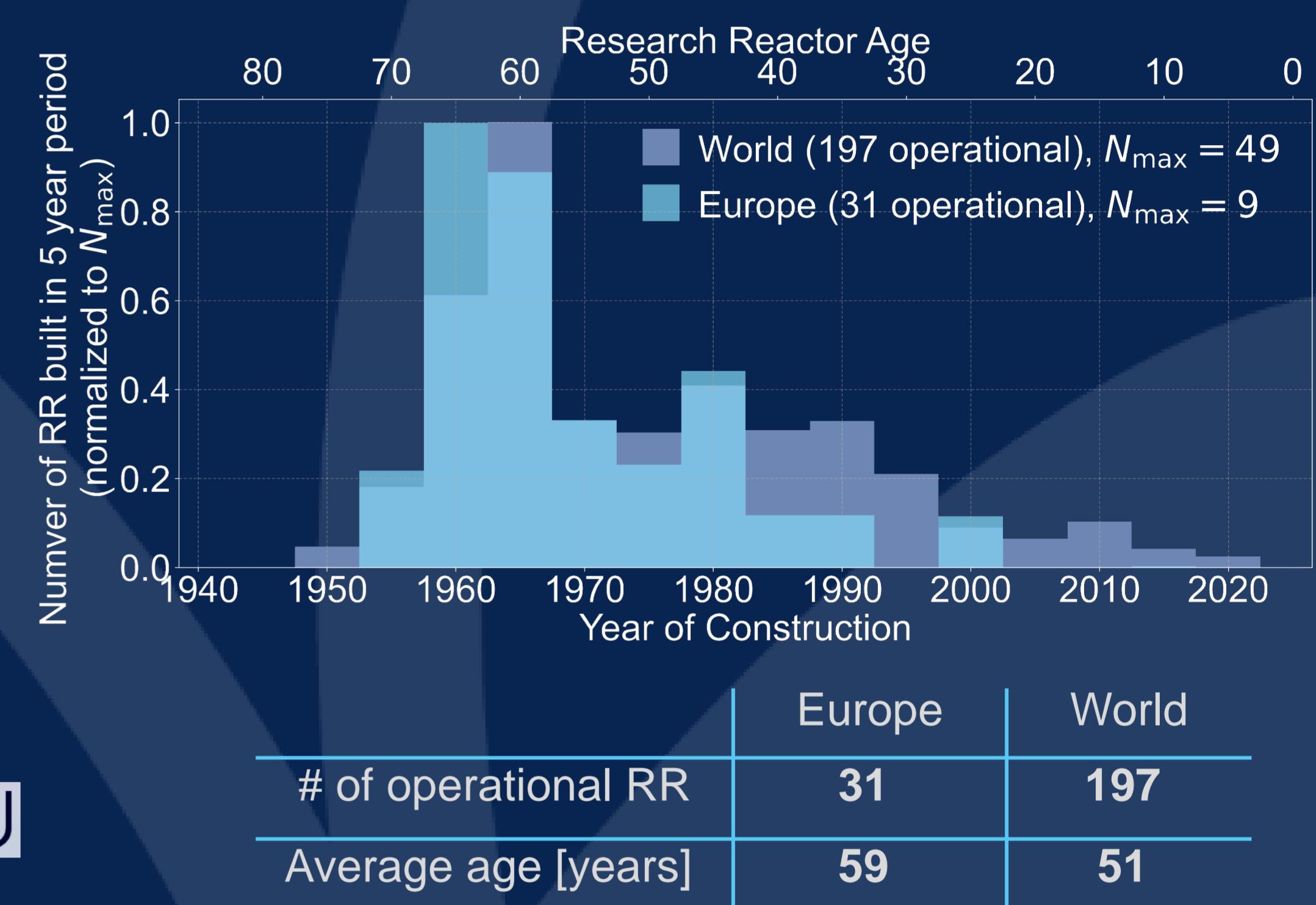
The Draghi report on EU competitiveness



Nuclear
Illustrative
Programme

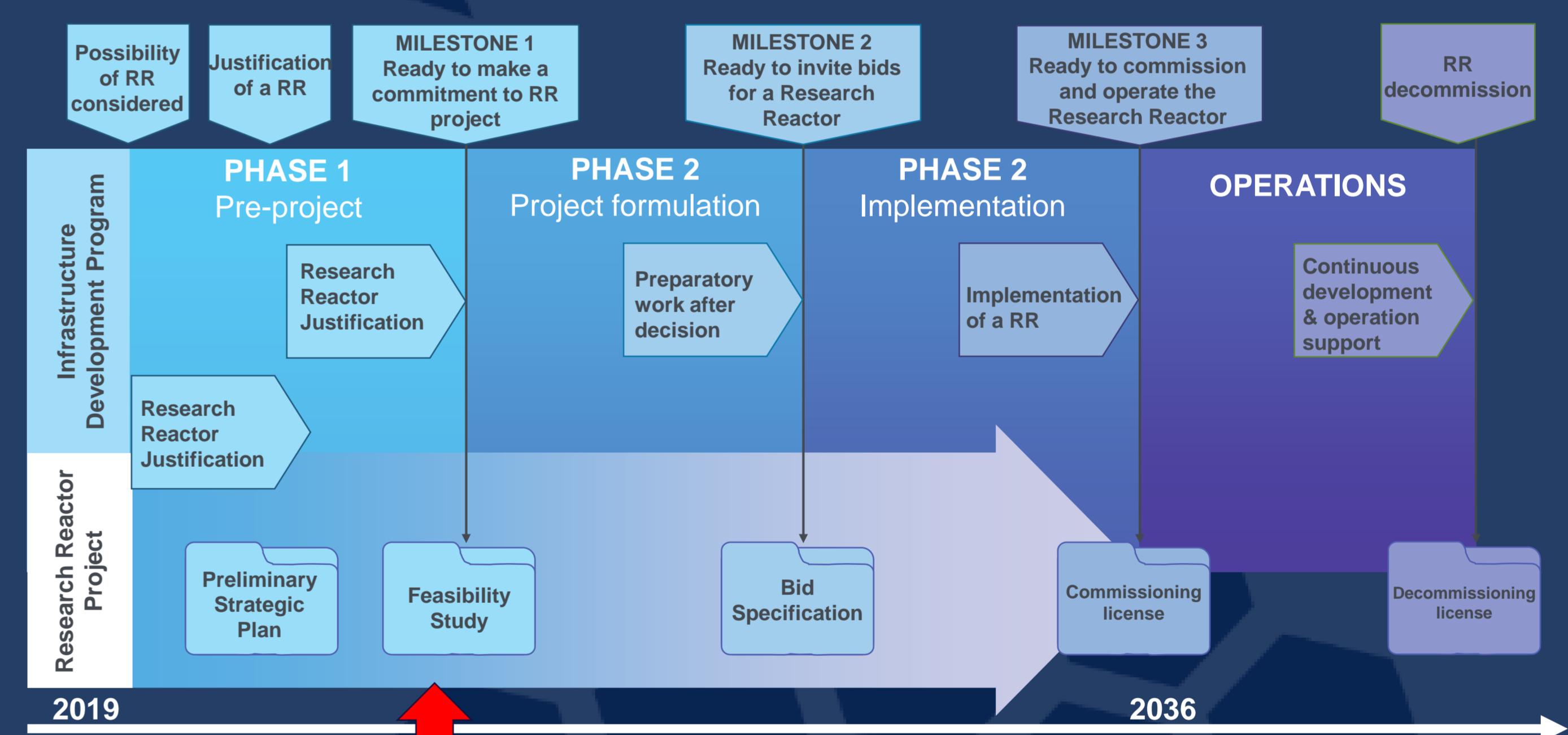


REPowerEU



PRELIMINARY DESIGN & TIMELINE

- Complementary to Europe's existing and emerging highly specialized research facilities – JHR, IFMIF-DONES, PALLAS, ESS and MYRRHA.
- Two reactor co-location strategy (sharing support infrastructure):
 - Compact 5 MW pool-type multi-purpose research reactor
 - Zero power research reactor
- Fuel flexibility by allowing partial core replacements in both MPRR and ZPR
- Ability of neutron spectrum tailoring and establishment of a multi-physics loops



STAKEHOLDERS AND UTILIZATION

	ZPR Stakeholder–Utilization Matrix			
Government and regulatory bodies	24	1	12	7
International research collaborations and networks	14	2	1	2
Universities	13	4	4	2
Research institutions	21	6	7	6
Healthcare and medical research institutions	1	0	0	2
Industry and private sector	7	2	2	0

Public outreach, education & training
Instrumentation dev. & validation
Support for reactor design, safety & code validation
Nuclear data & benchmark experiments

	MPRR Stakeholder–Utilization Matrix								
Government and regulatory bodies	10	1	7	8	0	0	7	2	7
International research collaborations and networks	12	1	1	2	0	1	0	2	1
Universities	9	1	1	2	2	0	2	0	2
Research institutions	16	4	3	5	2	4	7	7	13
Healthcare and medical research institutions	3	0	0	0	1	2	3	2	4
Industry and private sector	6	4	2	0	0	2	1	10	0

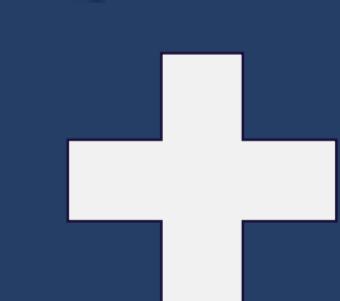
Public outreach, education & training
Instrumentation dev. & validation
Support for reactor design, safety & code validation
Nuclear data & benchmark experiments
Specialised industrial & medical applications
Isotope production & neutron source
Radiochemistry & radiation chemistry
Material testing & radiation effects
Neutron beam applications

We are here

Number of identified utilizations and stakeholders

One facility – Two reactors

Multi-purpose research reactor (MPRR)



Zero-power research reactor (ZPR)

We invite all interested institutions and experts to engage with the VERONICA initiative and contribute to shaping a shared research platform that supports Europe's scientific, industrial, and strategic objectives.