



EU GREEN DEAL

**MAKE IT
REAL**

**PARTNER EVENT
#EUGREENWEEK
30 MAY – 5 JUNE 2022**



MaxH2DR

Maximise H₂ Enrichment in Direct Reduction Shaft Furnaces

Prof. Dr. Valentina Colla, Scuola Superiore Sant'Anna

Dr. Thorsten Hauck, VDEh-Betriebsforschungsinstitut

**NEXT
GEN
EU**



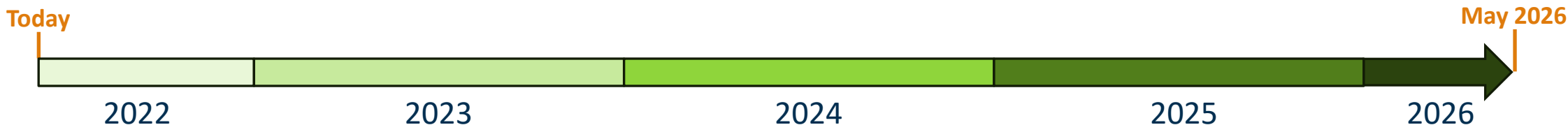
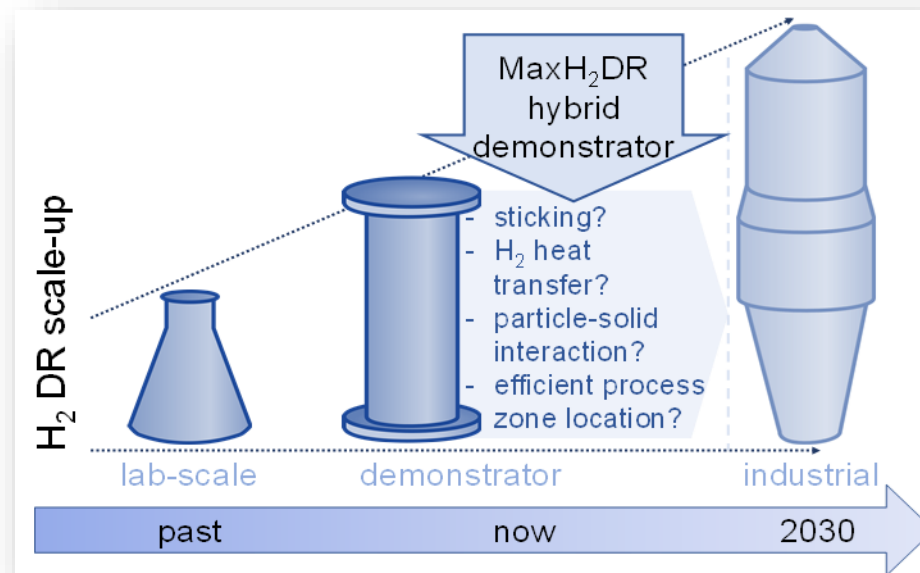
« from research to deployment of ground-breaking technologies for steel »

- **Hydrogen-based direct reduction as ground-breaking technology** for climate neutral steelmaking

- raise the maturity of the relevant toolkits from TRL 5 to TRL 8

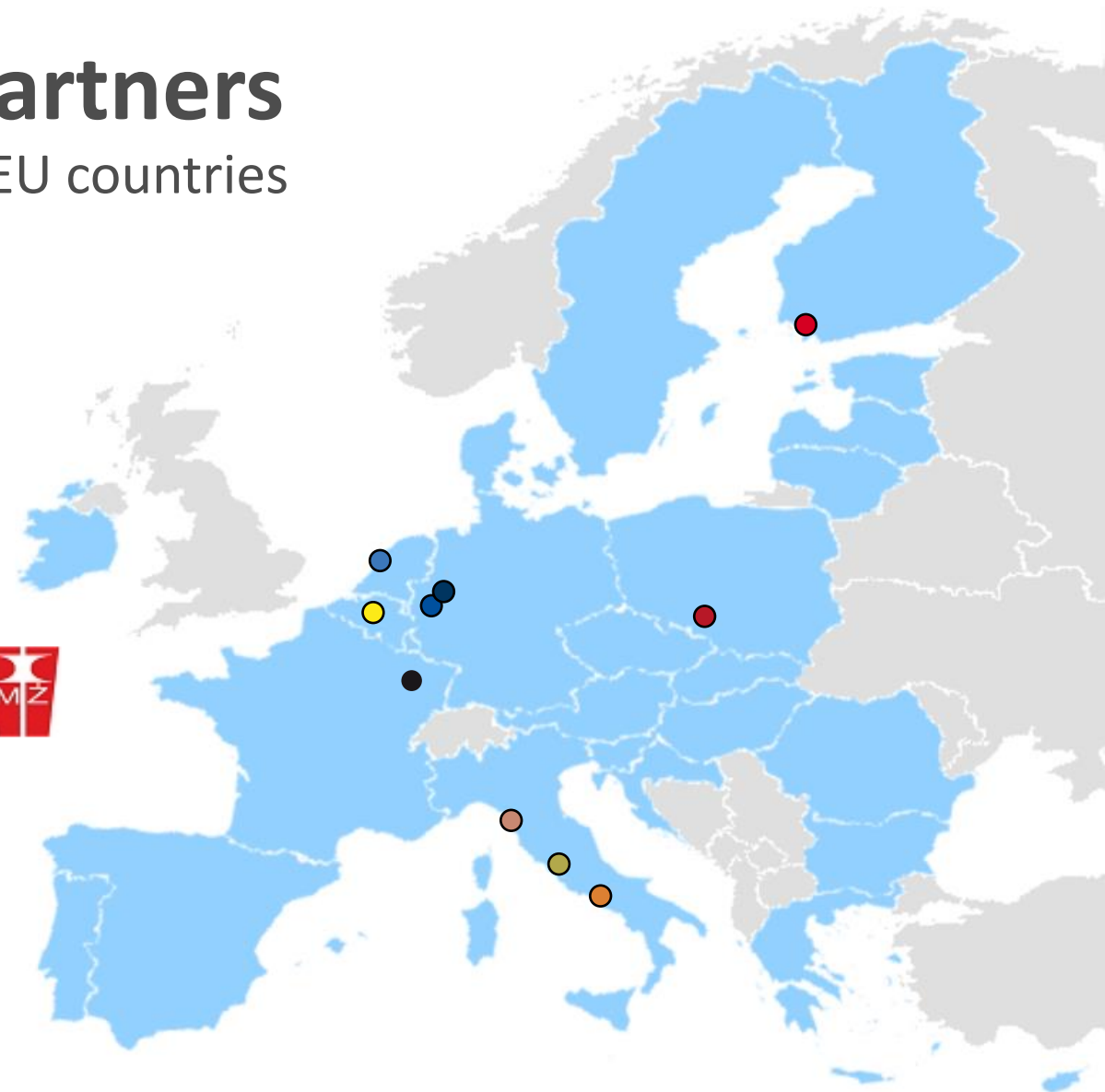
- Project key facts:

- Duration: 4 years (June 2022 – May 2026)
- Budget: 4.5 million Euro

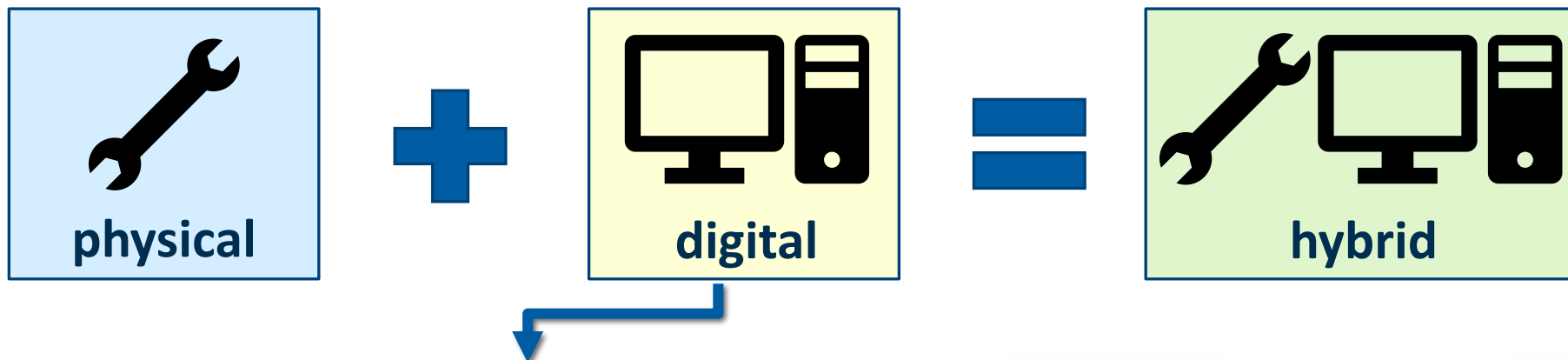




10 partners
from 7 EU countries

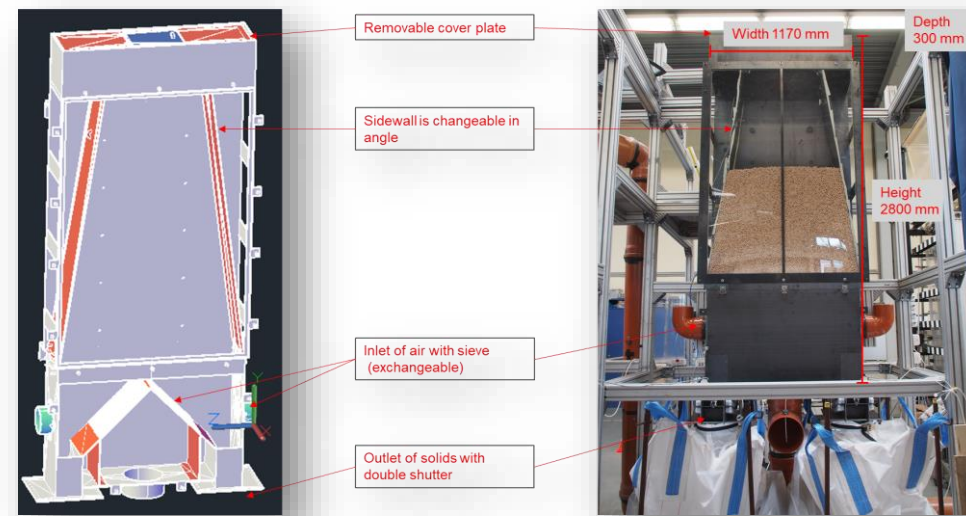


Hybrid demonstration approach:

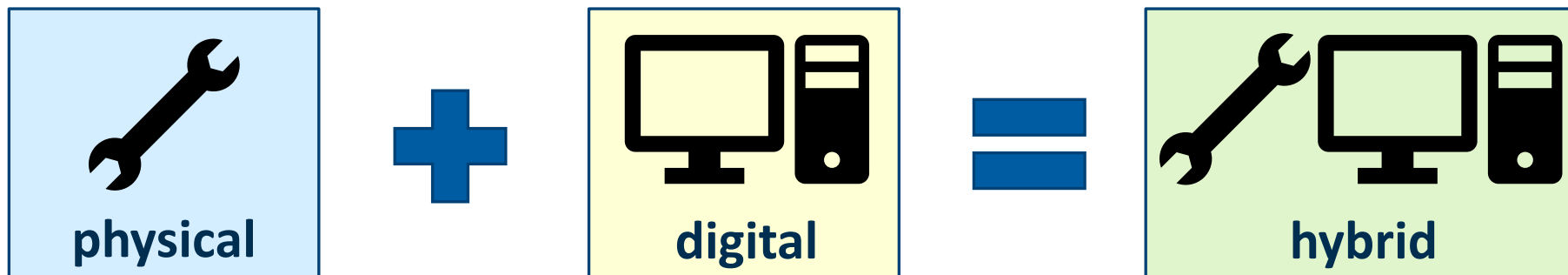


Physical component of “hybrid demonstration”:

- Physical and chemical **laboratory experiments** focussing on **reaction kinetics**
[0.001 – 10 kg material at various partners]
- **Bulkflow experiments** with gas counterflow focussing on **flow investigations**
[1 – 1.5 t material in BFI plant]

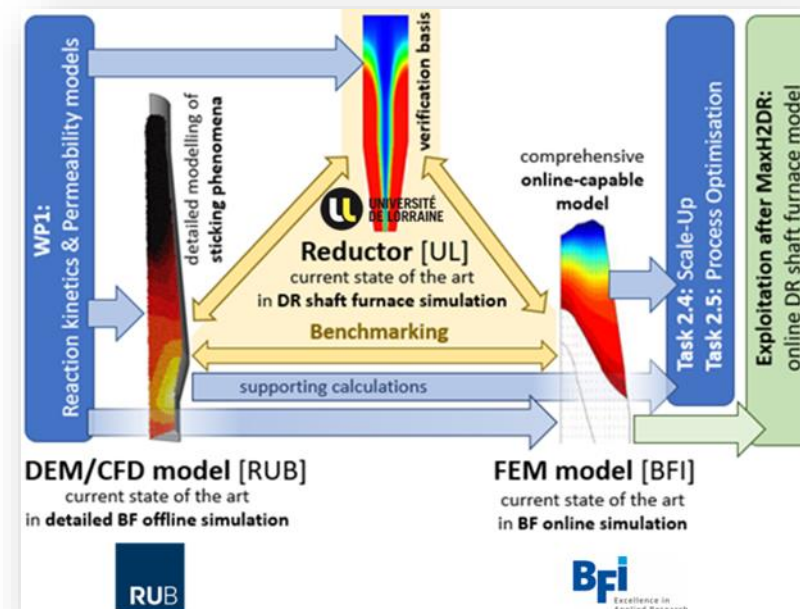


Hybrid demonstration approach:

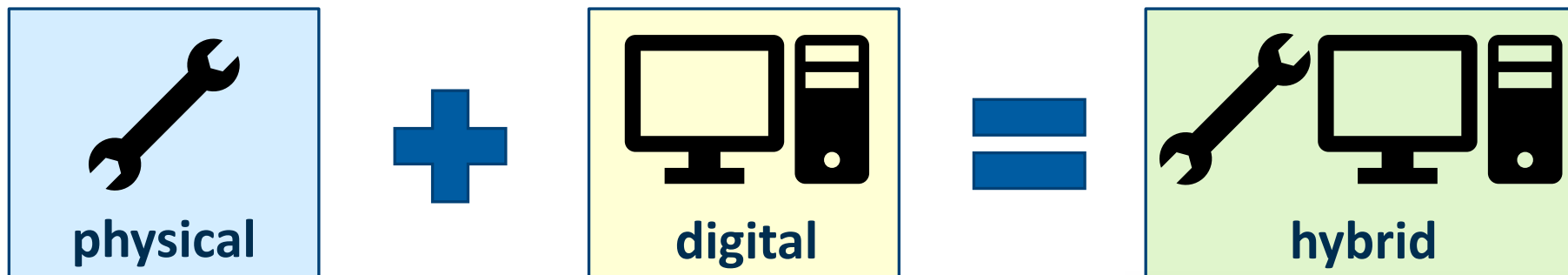


Digital component of “hybrid demonstration”:

- (Further) Development of **digital simulation tools for H₂-based Direct Reduction Shafts**
- Benchmarking and combined utilisation of **three detailed DR Shaft Furnace models**
- Long-term goal: Development of an **online application** to improve monitoring and control
- Complemented by **Steelmaking Chain Process Simulations for Process Integration**

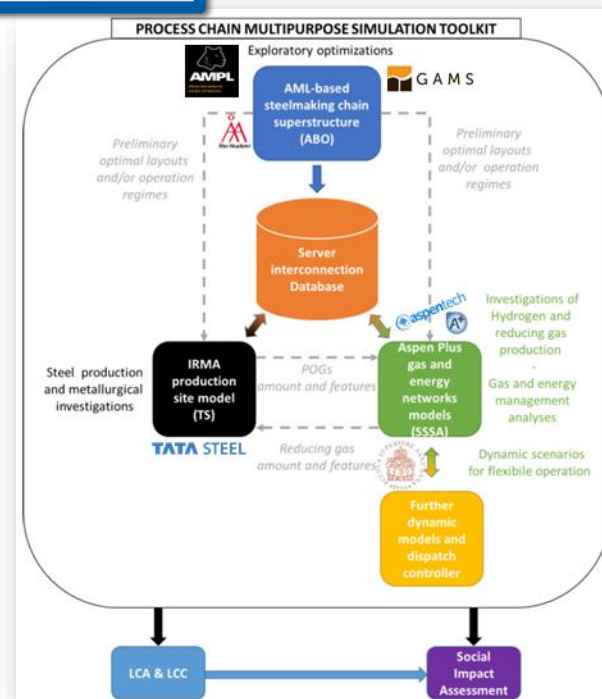


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- Implementation of an **External Expert Advisory Board**
- Extensive **Stakeholder Consultations**
- Investigation and development of **Exploitation strategies**
- Specific **dissemination events**, as e.g.
 - Webinar about «new fundamental knowledge and sub-models»
 - Webinar about «industrial demonstration of H₂-enriched direct reduction»
 - Webinar about «steelmaking process chains based on H₂-enriched direct reduction»
 - Big Final Dissemination Event
 - ...