



IPCEI: Electrolyzer GW Fab in Flanders

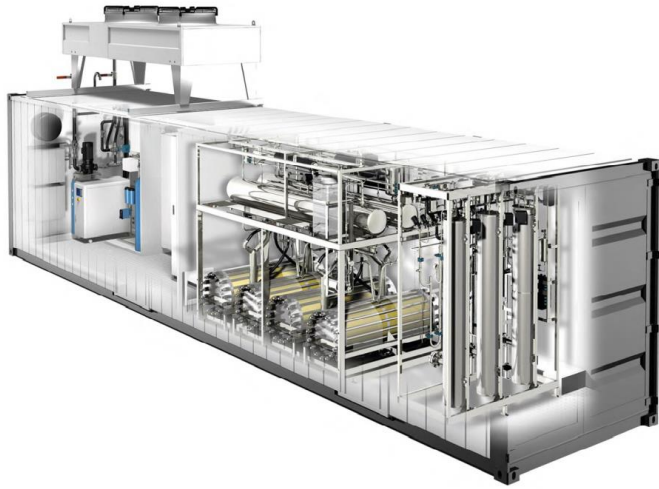
23 March 2023, NextGenerationEU: invest in greener and more digital Belgium

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Electrolyzer GW Fab : the strategic opportunity

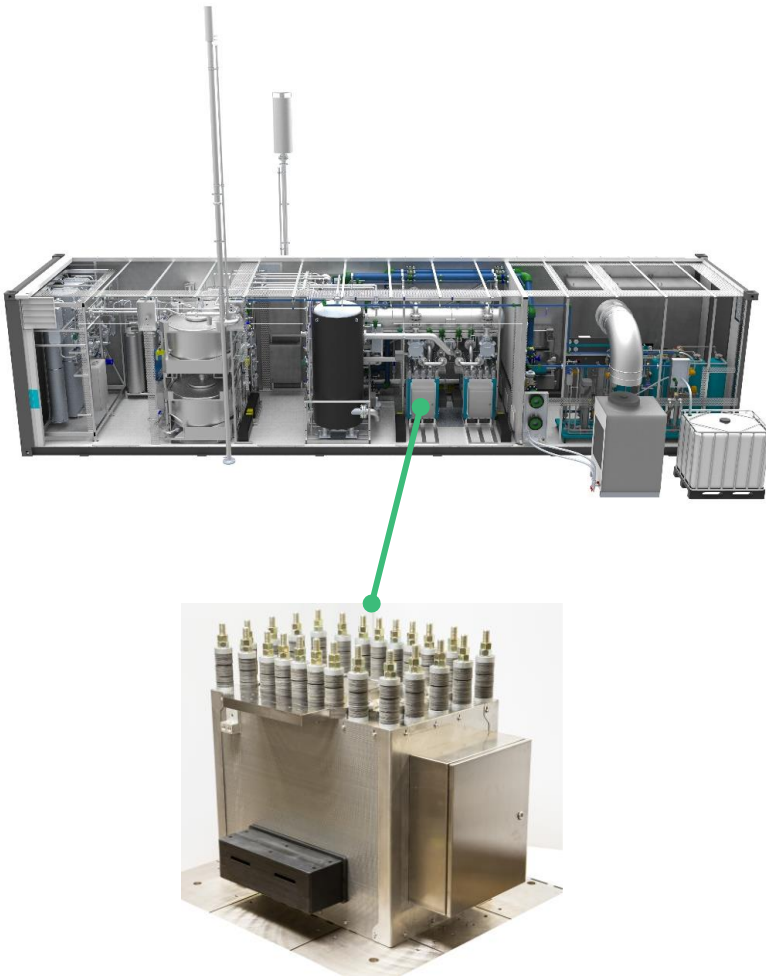


WATER ELECTROLYSIS

WATER (H₂O) + **POWER** → **HYDROGEN** (H₂) + OXYGEN (O₂)

- Regulatory framework is changing rapidly for hydrogen and water electrolyzers
- Rapid upscaling (GW scale) is required to support ambitious EU targets
- Technology and products are key for success
- Historical activity in Belgium (Flanders) and Canada
- IPCEI funding and support from Flanders has been decisive to invest in Flanders
- For the EU: PEM cell stack manufacturing (BE) and system assembly (BE & SP)

Electrolyzer GW Fab : objectives R&D and First Industrial Deployment

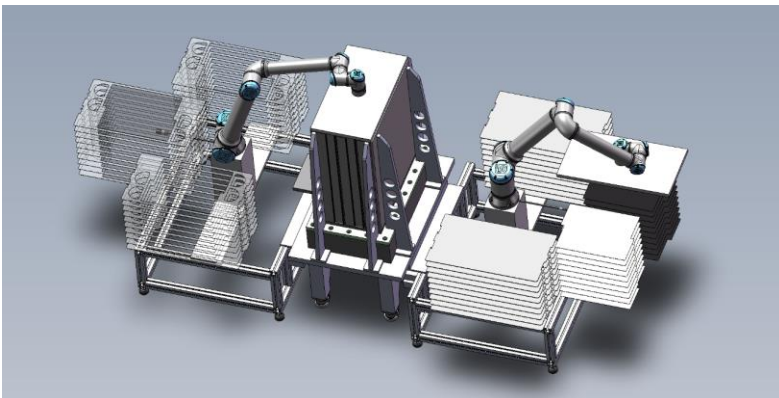


- **Cell stack upscaling:** more cells, larger active areas, thinner membrane and higher current densities
- **Materials and components:** MEA improvements (efficiency, durability), reduction of iridium and platinum loadings, alternative materials
- **Product design**
 - Standardization is essential
 - Upscaling: for larger projects (25 -1000 MW)
 - Innovative product design : robust & reliable, compact (low footprint), modular (easy to transport), plug&play, design to manufacture, design to service, easy to integrate
 - Power transformers/rectifiers optimization
- **Manufacturing:** from manual to (semi-) automated production process, from bay manufacturing to flow manufacturing
- **Vertical integration and supply chain** optimization

Electrolyzer GW Fab: project status



- R&D work on cell stack components
- Test of new production equipment for cell stack manufacturing (first industrial deployment)
- Preparation of the implementation of a flow manufacturing process for cell stacks and electrolyzer systems
- Production in 2 shifts
- Expansion in Flanders from 7.600 m² to 17.200 m² (from 75 to 200 FTE and more to come)



Thank you!



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