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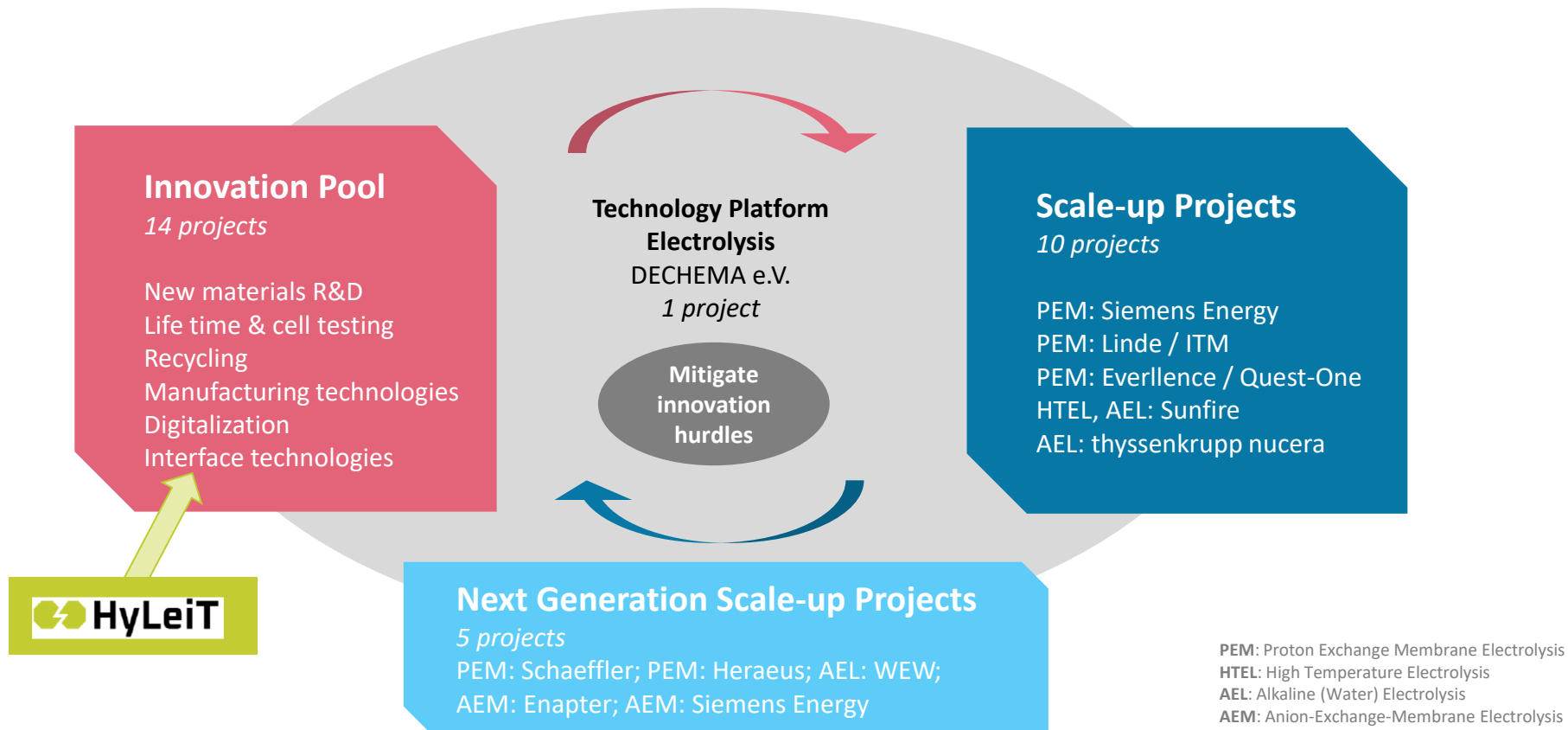


H₂Giga – Industrialization and scale-up of water electrolysis

Highlights of project results

Isabel Kundler, DECHEMA e.V.

Workshop HyLeiT, Online, 26.09.2025



Stack Assembling Lines and Automation with *H₂Giga inside*

PEM electrolysis

- Siemens Energy: Gigafactory (Berlin)
- Quest One: Gigahub (Hamburg)

Alkaline water electrolysis

- Nucera: Automated cell assembling unit
- WEW: Partially automated pilot line for stack assembling



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© Siemens Energy



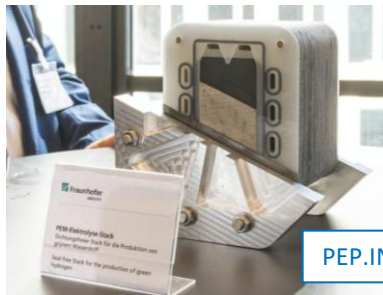
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New Cell and Stack Generations

- ▮ New PEM stack design on megawatt scale (StaCIE)
- ▮ ‚No-seal PEM stack‘ based on thermoplastic graphite composite bipolar plates, on lab-scale (PEP.IN)
- ▮ New stack design for alkaline water electrolysis (InstallAWE)



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PEP.IN



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StaCIE

From Innovation Pool Projects

▮ New Materials

- ▮ MEAs based on non-fluorine membranes, stable in >2000 h long term test
- ▮ New PEM catalysts with reduced iridium content

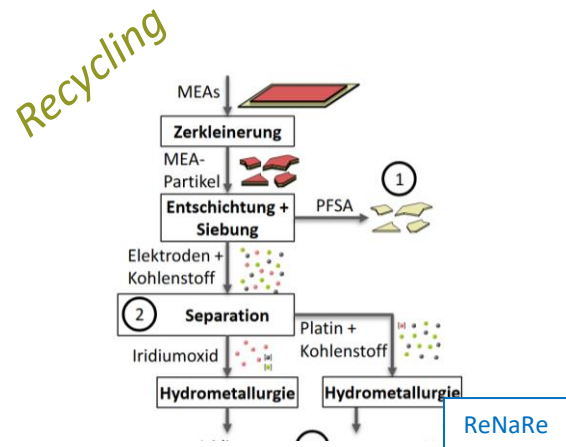
▮ Recycling

- ▮ Recycling concepts and processes developed, in particular for precious metal components

▮ Digitalization & Interface technologies

- ▮ Digital planning tool EDDIE to orchestrate electrolysis with energy system
- ▮ Modular power supply solutions and innovative converters ...





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Thank you for your attention!

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