

HYDROGEN TECHNOLOGY

Mubea is strongly committed to hydrogen

Mubea as a global supplier offers strong performance for hydrogen components.

- **Development:** Mubea is the right partner for the very start with e.g. forming simulation as well as structural FEA.
- **Tooling & Industrialization:** With in-house tool and equipment manufacturing, Mubea is able to implement customized and cost- optimized tooling and industrialization concepts.
- **Raw Material:** With our decades of experience in the field of raw material, we can provide our customer with the best possible advice, not only steel but also nickel, titanium and other specialty materials.
- **Production:** Mubea can provide a wide range of production technologies for the manufacture of bipolar plates in a wide variety of designs and dimensions. This also includes the assembly of subsystems, such as the stacking of cell packs.



Your partner for bipolar plates. Let's discuss your business case.

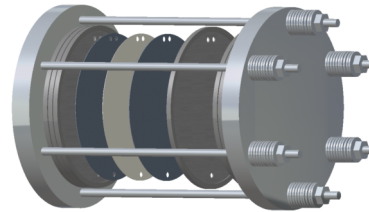
Bipolar plates for all applications

Status:

- Several projects in development for the growing market of hydrogen production and utilization
- Global disc spring supplier for the stack compression of electrolyzers and fuel cells
- 1st SOP for upscaled electrolyzers components project in Q2 2025

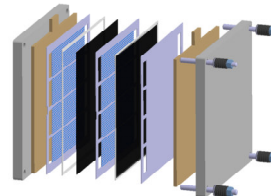
Alkaline (AEL) and Alkaline Membrane (AEM):

Embossed Cell Frames made of nickel or steel with nickel coating



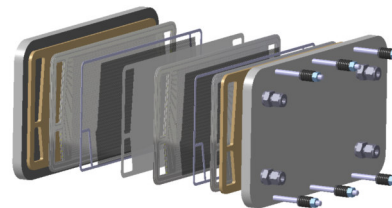
Solid Oxide (SOEC, SOEL, SOFC):

Stainless steel bipolar plates with fine channel structures

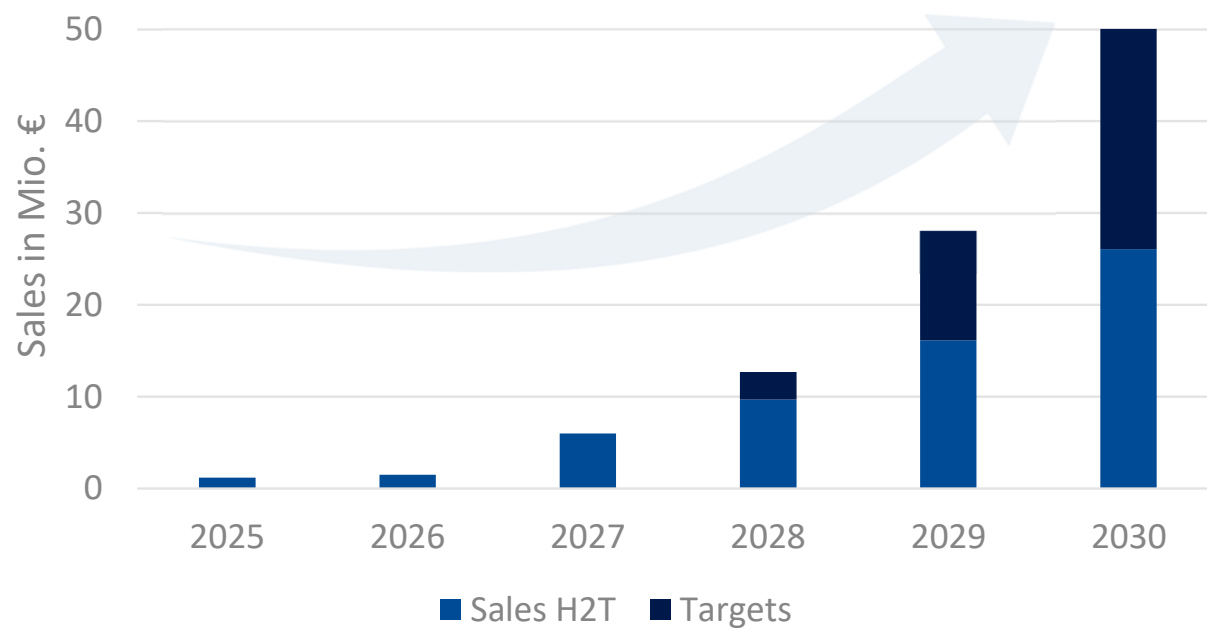


Proton Exchange Membrane (PEM) :

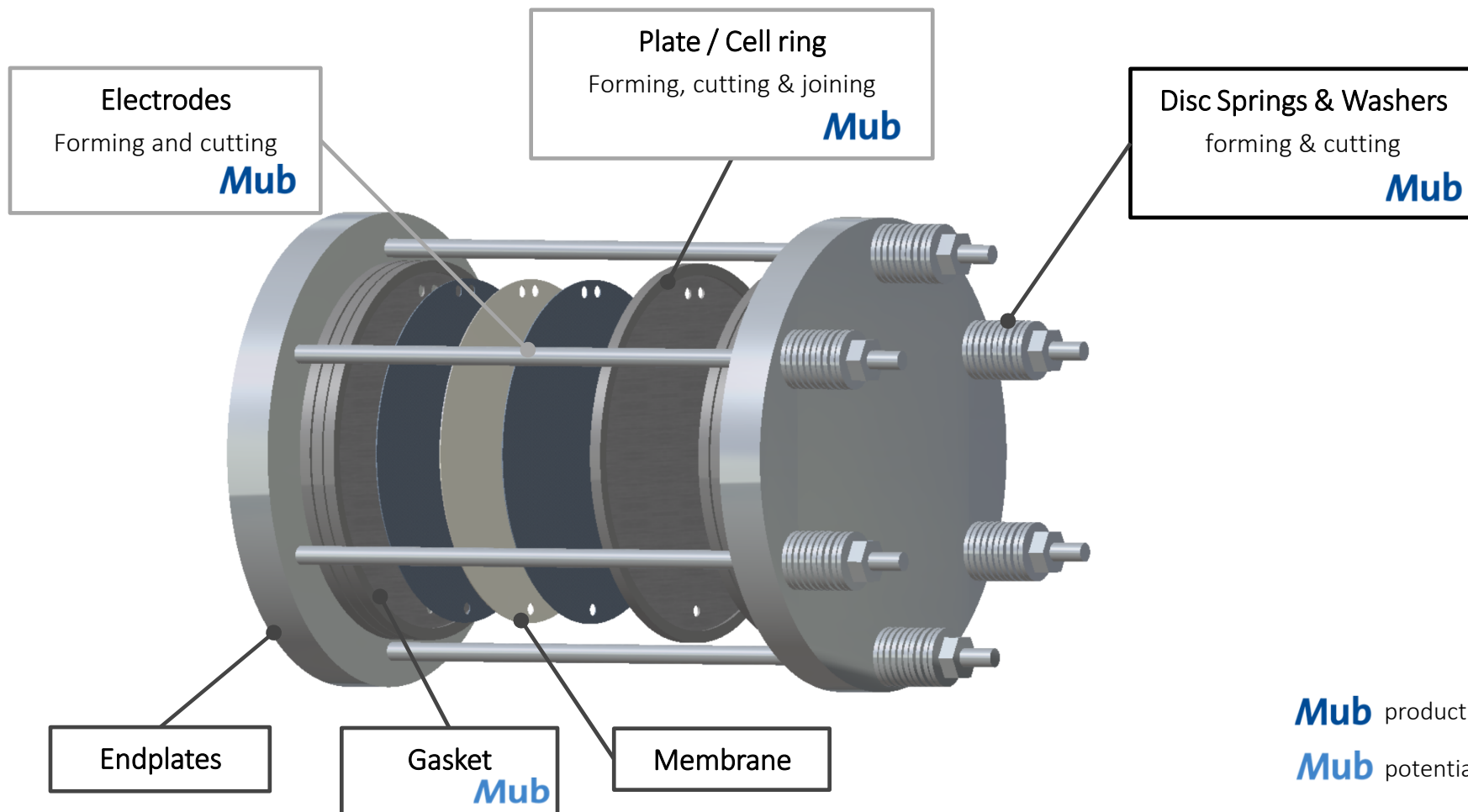
Flat or structured stainless or titanium bipolar plates



Sales Development Hydrogen Technology

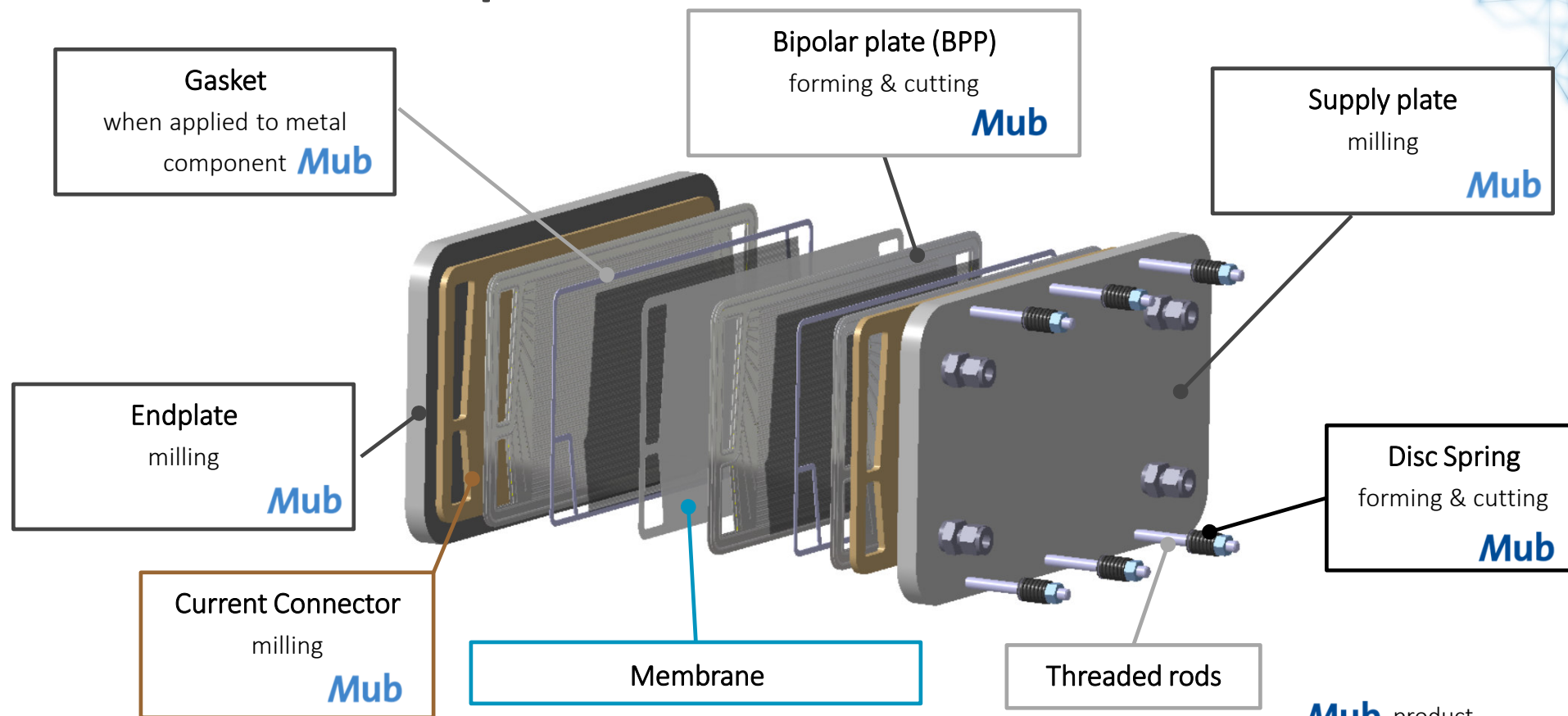


ELY stack I Alkaline components



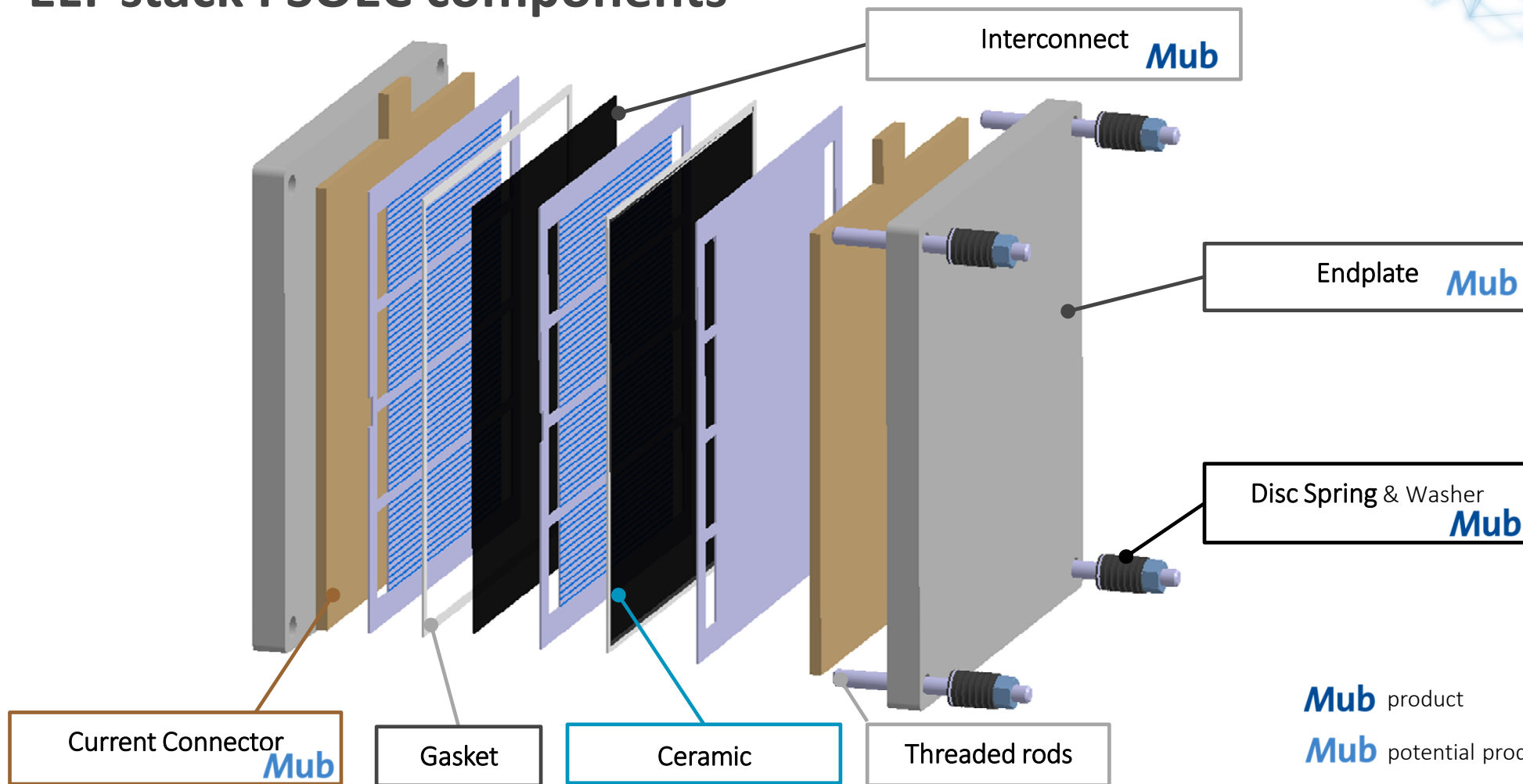
Mub product
Mub potential product

ELY stack I PEM components



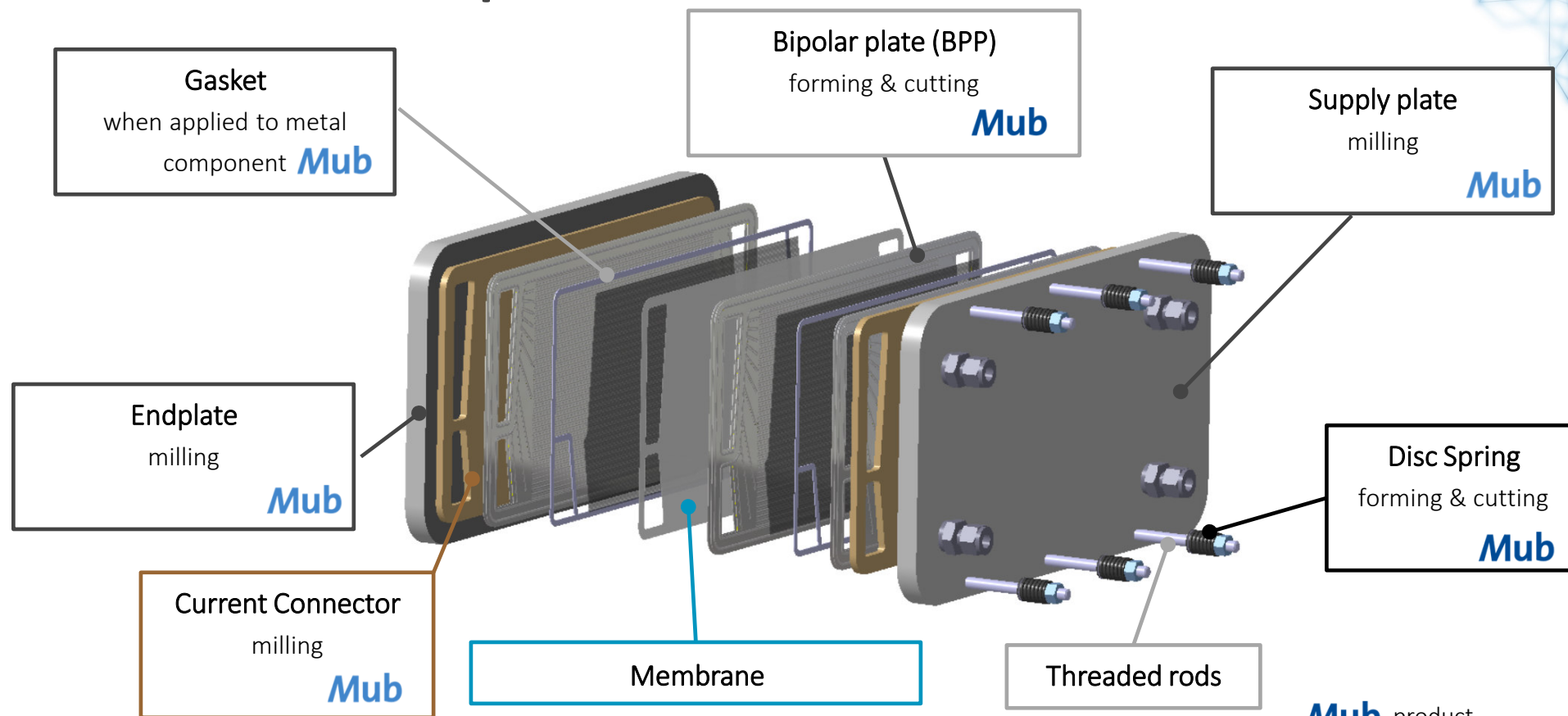
Mub product
Mub potential product

ELY stack I SOEC components



Mub product
Mub potential product

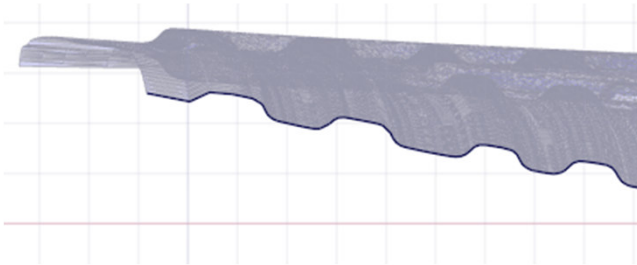
ELY stack I PEM components



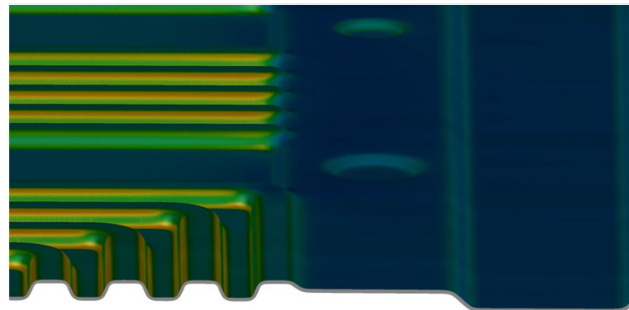
Mub product
Mub potential product

Development & Simulation

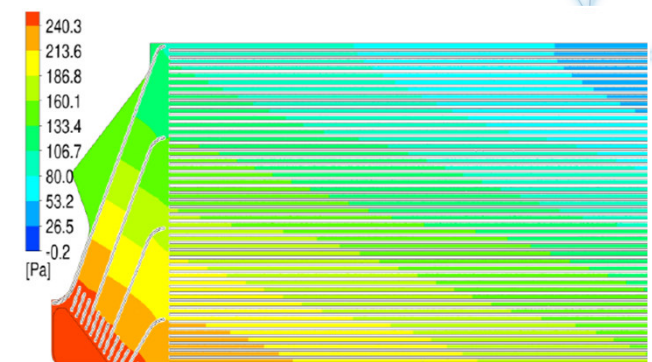
Design



Forming simulation

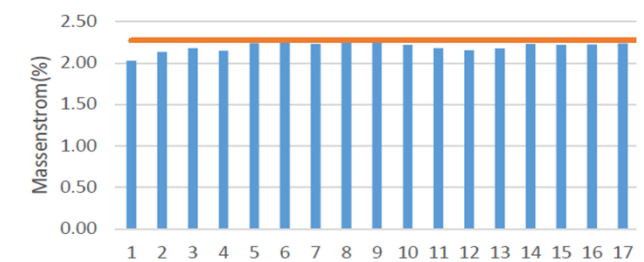
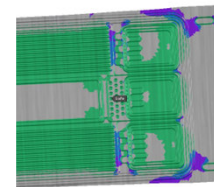
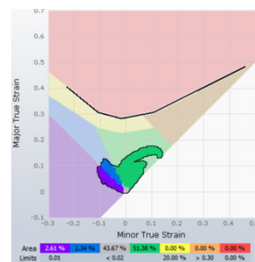
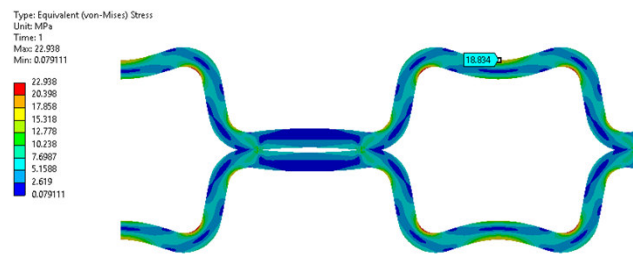


CFD Simulation



Cell - Pressure contour

Structural FEA



Cell - Fluid mass flow homogeneity

Hydrogen business development roadmap

1st Electrolyser
Disc Spring



1st Electrolyser
Disc Spring System



H2T Production
WTF



Material supply chain
Nickel, Titanium
and Cellring



Cell Frame
welding assembly

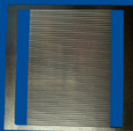


Roadmap from „Build to Print“ towards „System-supplier“

2020

2030

Development
partner for
machined BPP



Component production
Cell Frames



Electrodes



Cell frame
crimping assembly



Stack Production

