

Do you know your future Role in Hydrogen Economy?

Consortial Knowledge Project Q1/2020
„Fuel Cell & Electrolyzer Technology and Production”

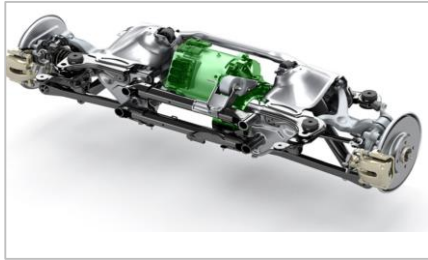
Key Facts

Source: VON ARDENNE Corporate Archive,
substrate provided by Borit

The Motivation

Qualitative Level of Industrialization of Electric Powertrain Components

Electric Powertrains



Level of Industrialization (LoI) Production Processes

80%

Level of Industrialization (LoI) Product Design

Batteries

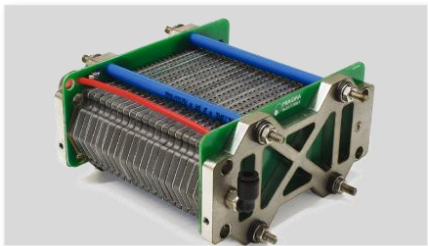


LoI Production Processes

90%

LoI Product Design

Fuel Cells

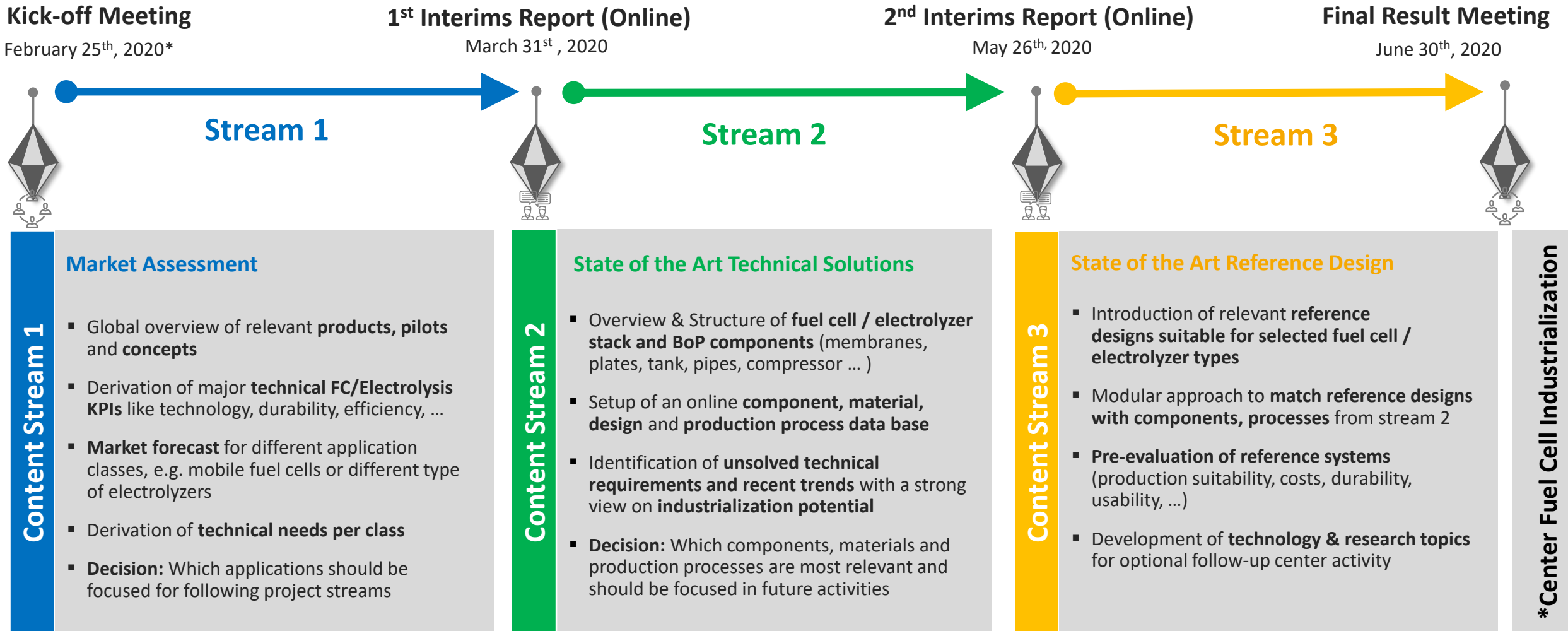


LoI Production Processes

LoI Product Design

0%

100%



*After finalizing the project all partners are invited to join the RWTH Aachen Campus center for Fuel Cell Industrialization. Within the center framework partners will receive continuous market and technology knowledge, cooperate with industrial players and join consortial prototyping and research projects.

In order to cope with the huge demand in terms of transparency regarding the hydrogen value chain we offer a **consortial knowledge project from February till June 2020:**

- **Stream I:** in addition to a global **application scouting** an **evaluation of market sizes** for mobile fuel cell and stationary electrolysis applications will be performed
- **Stream II:** the broad field of relevant **components, materials** and **production processes** will be **structured** and **evaluated** and a joined online data-base of fuel cell & electrolyzer components and their major KPIs will be established with **focus on industrialization**
- **Stream III:** one or more **reference designs** will be introduced, fitted with relevant components from stage II and pre-evaluated in terms of costs & industrialization potential
- From July 2020 partners are invited to join the **RWTH Aachen Campus Center for Fuel Cell Industrialization** in order to network with industrial players, to join consortial prototyping, research and knowledge projects and to work on their own **hydrogen roadmap**.

Consortial Knowledge Project

 **Start: February 2020**

 **End: June 2020**

 **Approx. 10 to 15
consortium partners**

Partner contribution 20.000 €

Market Intelligence

- Evaluate your target markets
- Know the technological market needs
- Estimate your business potential

Technology Understanding

- Gain technological transparency
- Understand the key factors for production upscaling
- Position yourself as a key enabler

Identification White Spots

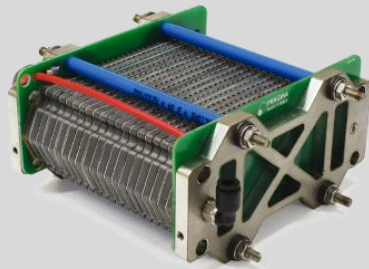
- Learn about barely solved problems
- Identify your chances for innovation
- Get ready to diversify into a new field

Future Developments

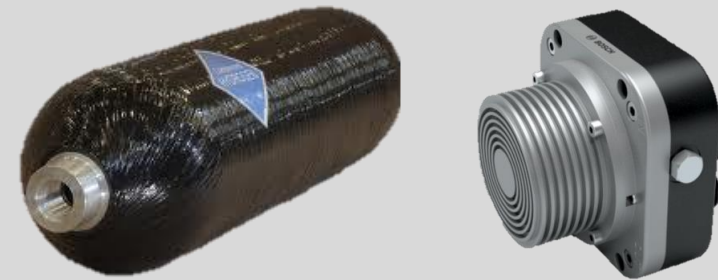
- Use known expert partners to learn about the next design steps
- Create your roadmap to participate in hydrogen economy

Focus Areas

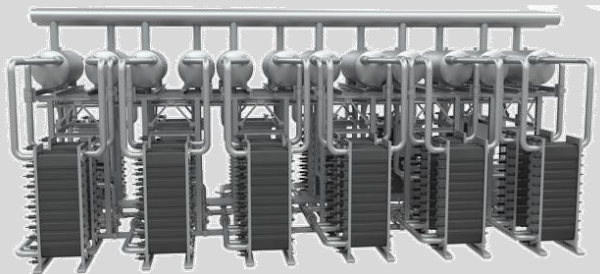
Fuel Cell Stack Components



Fuel Cell Balance of Plant



Electrolyzer Components

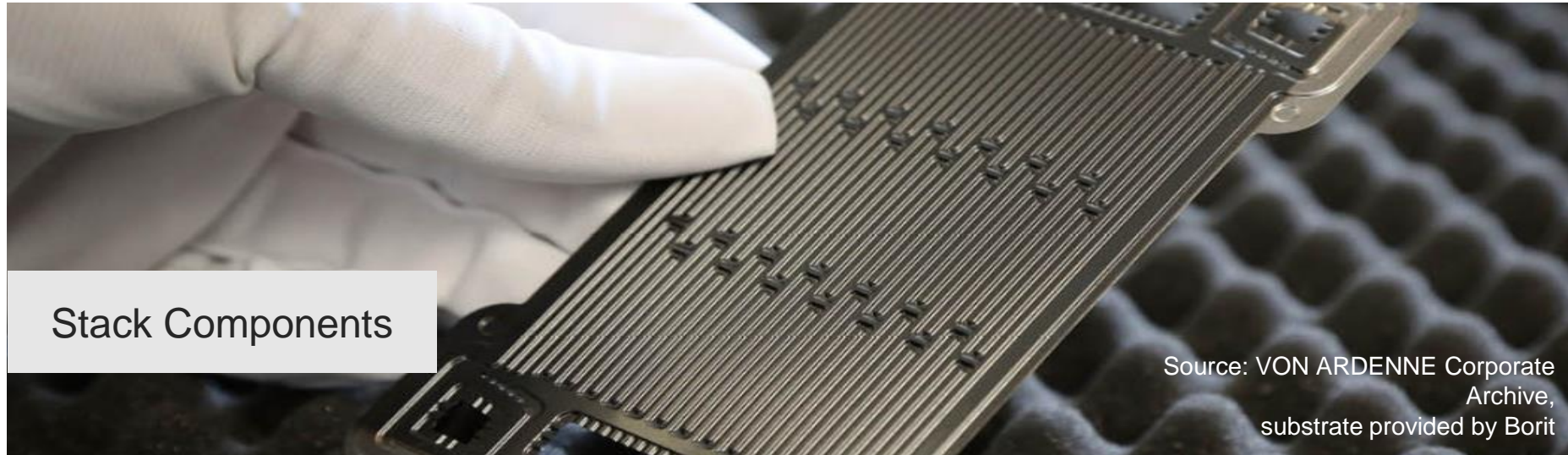


Electrolyzer Balance of Plant



FUEL CELL & ELECTROLYZER TECHNOLOGY AND PRODUCTION

Exemplary Fuel Cell Stack Components of Interest



Membrane

Catalyst Layer

Catalyst Support

MEA Gasket

Gas Diffusion

Cooling Plate

Bipolar Plate

BPP Gasket

BPP Coating

Bus Plates

End Plates

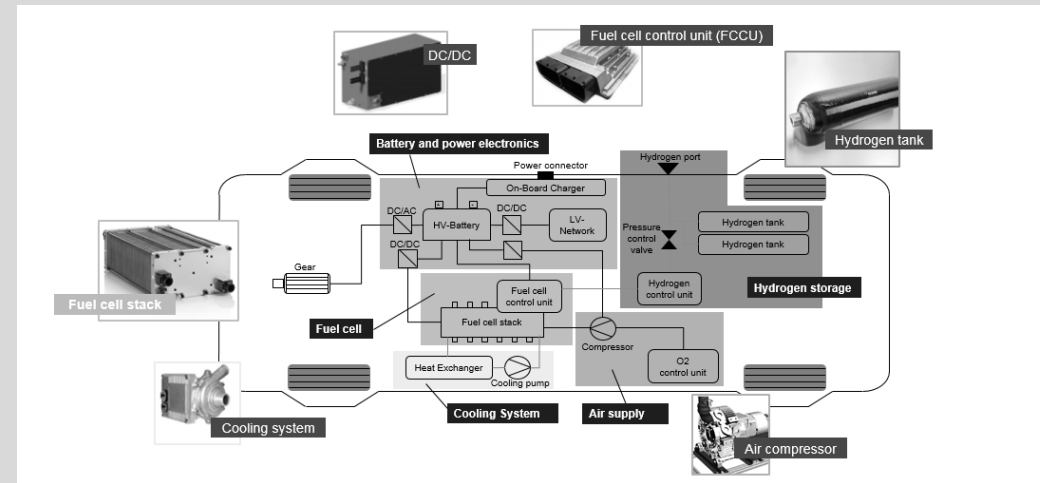
Manifolds

Focus questions regarding your target applications are highly welcome!

FUEL CELL & ELECTROLYZER TECHNOLOGY AND PRODUCTION

Exemplary Fuel Cell BoP Components of Interest

Balance-of-Plant



H₂ Tank

DC/DC/AC Unit

FC Control Unit

H₂ Lines

Cooling System

Air Compressor

Housing

Battery

E-Connections

Pressure Valves

H₂ Control Unit

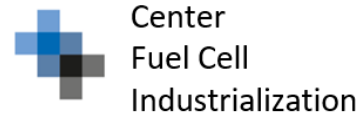
Control Sensors

Focus questions regarding your target applications are highly welcome!

Project Management



RWTH Aachen Campus Partners



Center Fuel Cell Industrialization Research & Networking Partners





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