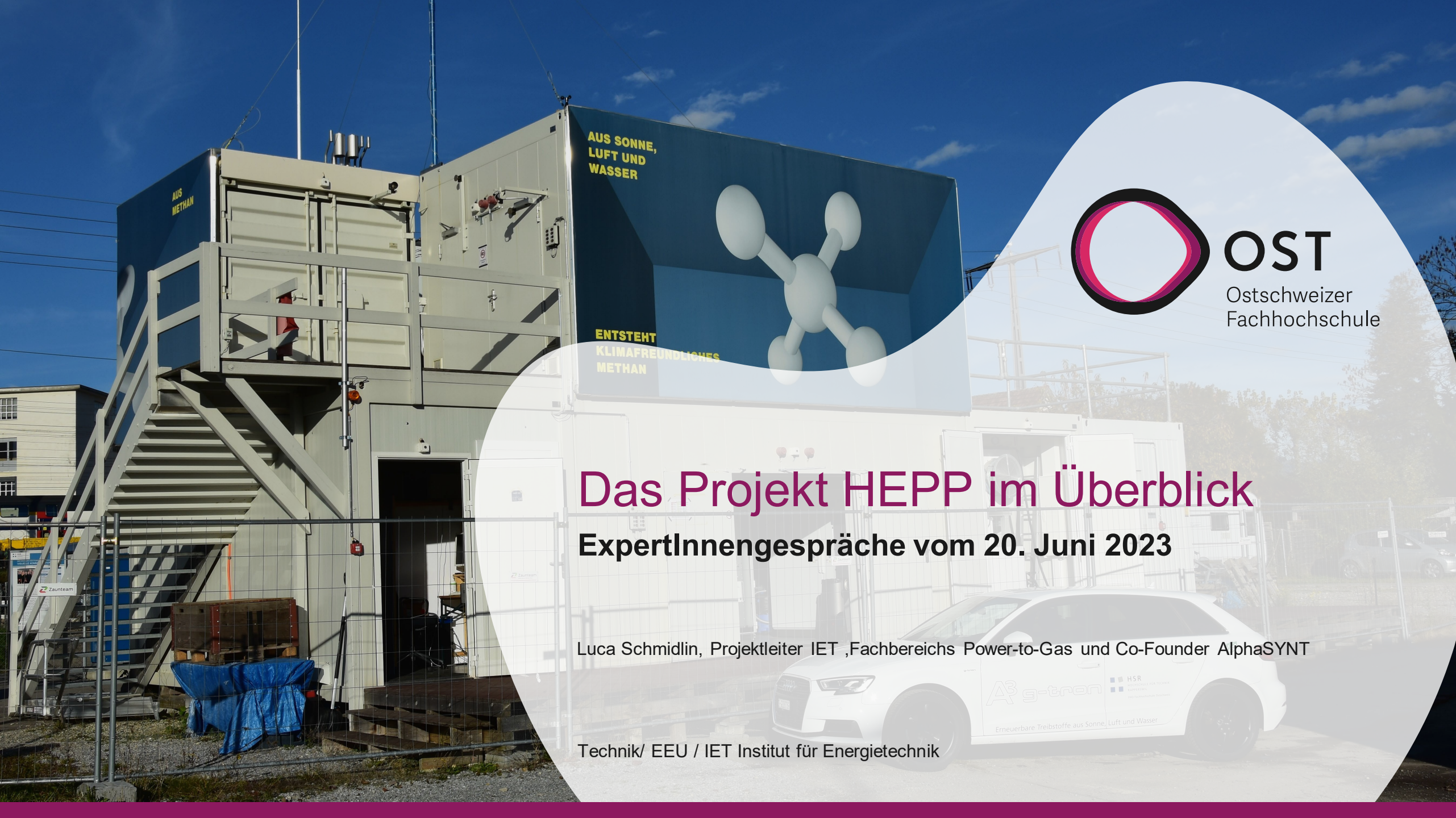


OST
Ostschweizer Fachhochschule

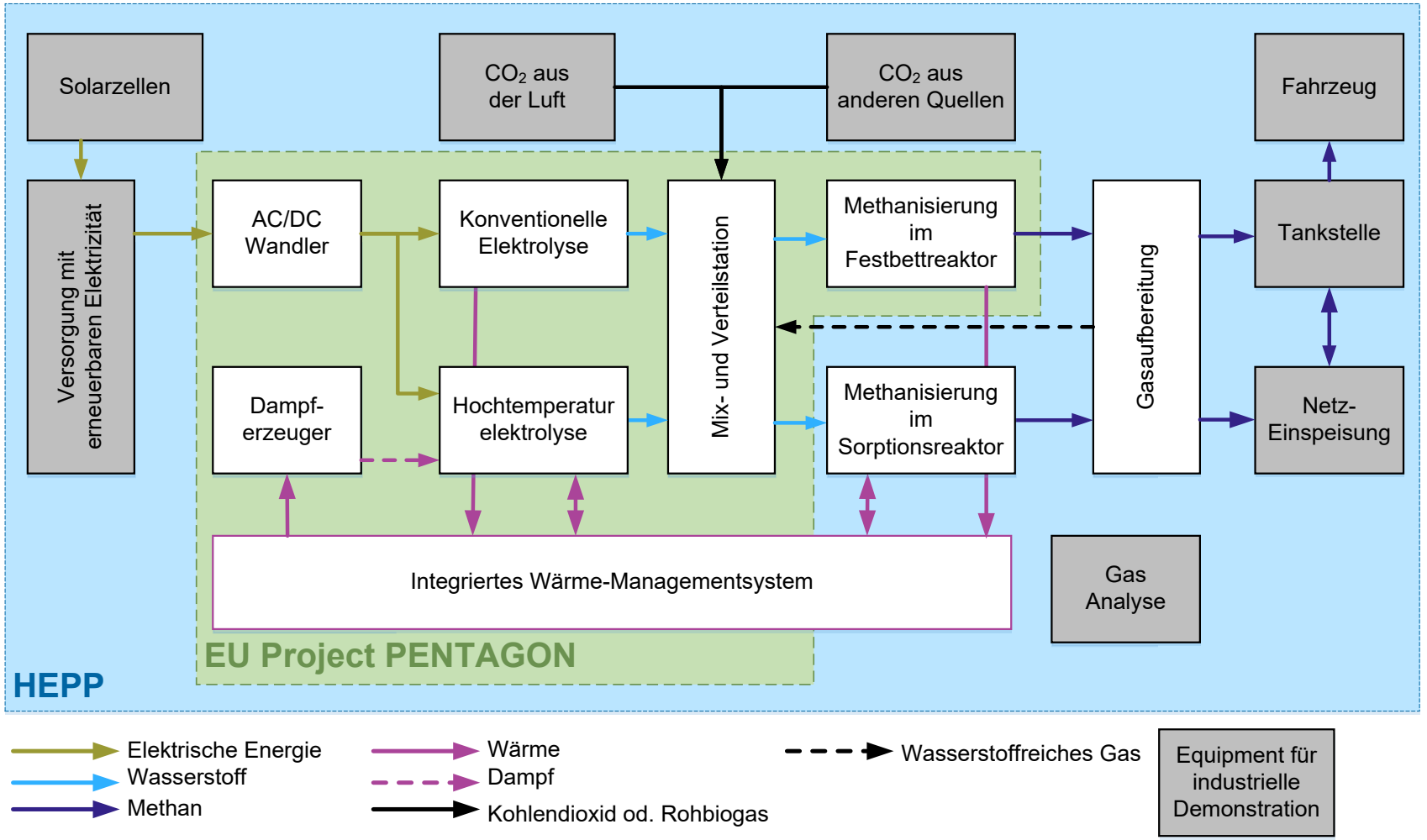
Das Projekt HEPP im Überblick

ExpertInnengespräche vom 20. Juni 2023

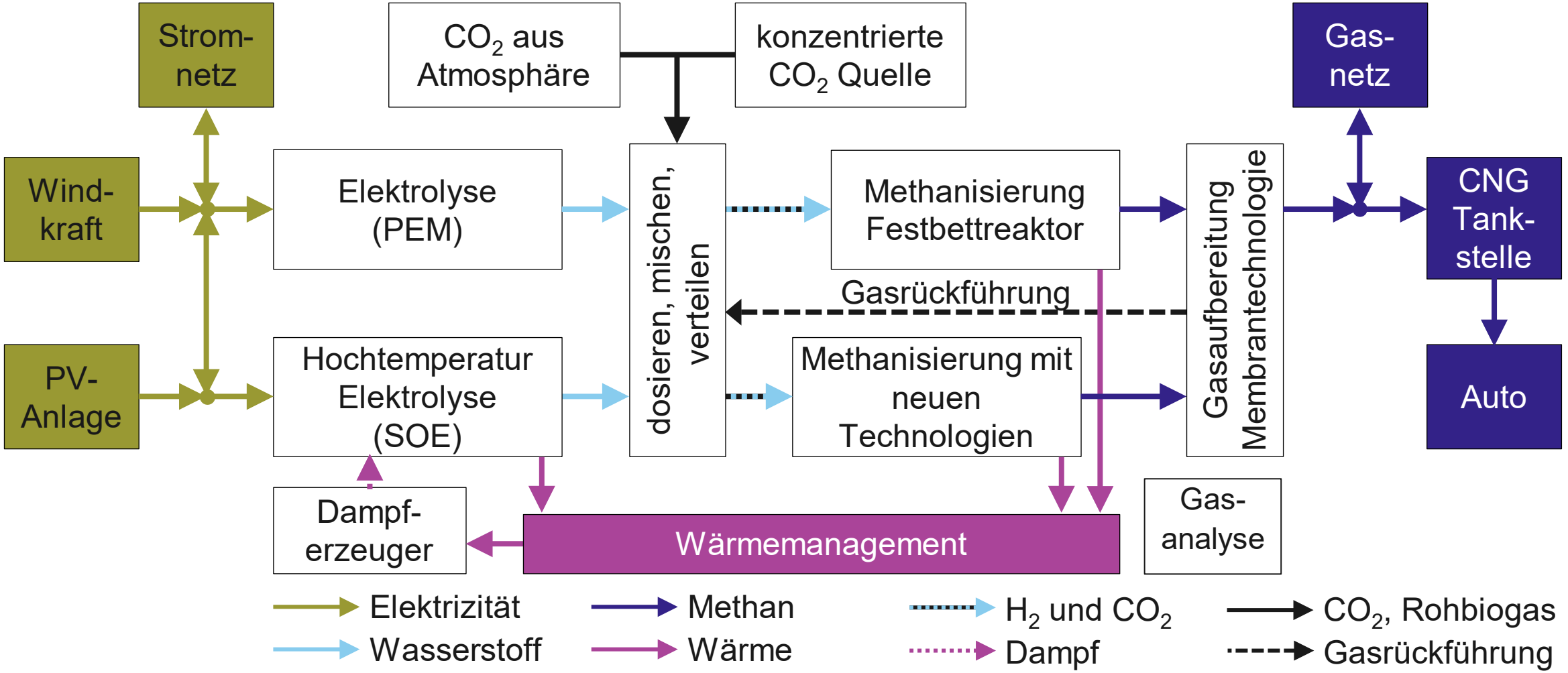
Luca Schmidlin, Projektleiter IET ,Fachbereichs Power-to-Gas und Co-Founder AlphaSYNT

Technik/ EEU / IET Institut für Energietechnik

HEPP Projektkonzept von 2017



High Efficiency Power-to-Methane Pilot (HEPP)



Power-to-Gas Team 2018

Friedl

Meier

Ruoss

Schmidlin

Moebus

Gorre

de Sousa

Angst

Lydement

Steiner

Fachbereich Power-to-X, Heute

IET Power-to-X Team


Markus Friedl


Zoe Stadler


Marius Kaltenbach


Boris Kunz


Christoph Steiner


Cristina Antonini


Imre Antalfy


Laurin Hilfiker


Boris Meier


Matthias Frommelt


Fiona Hauser


Dariusz Nowak

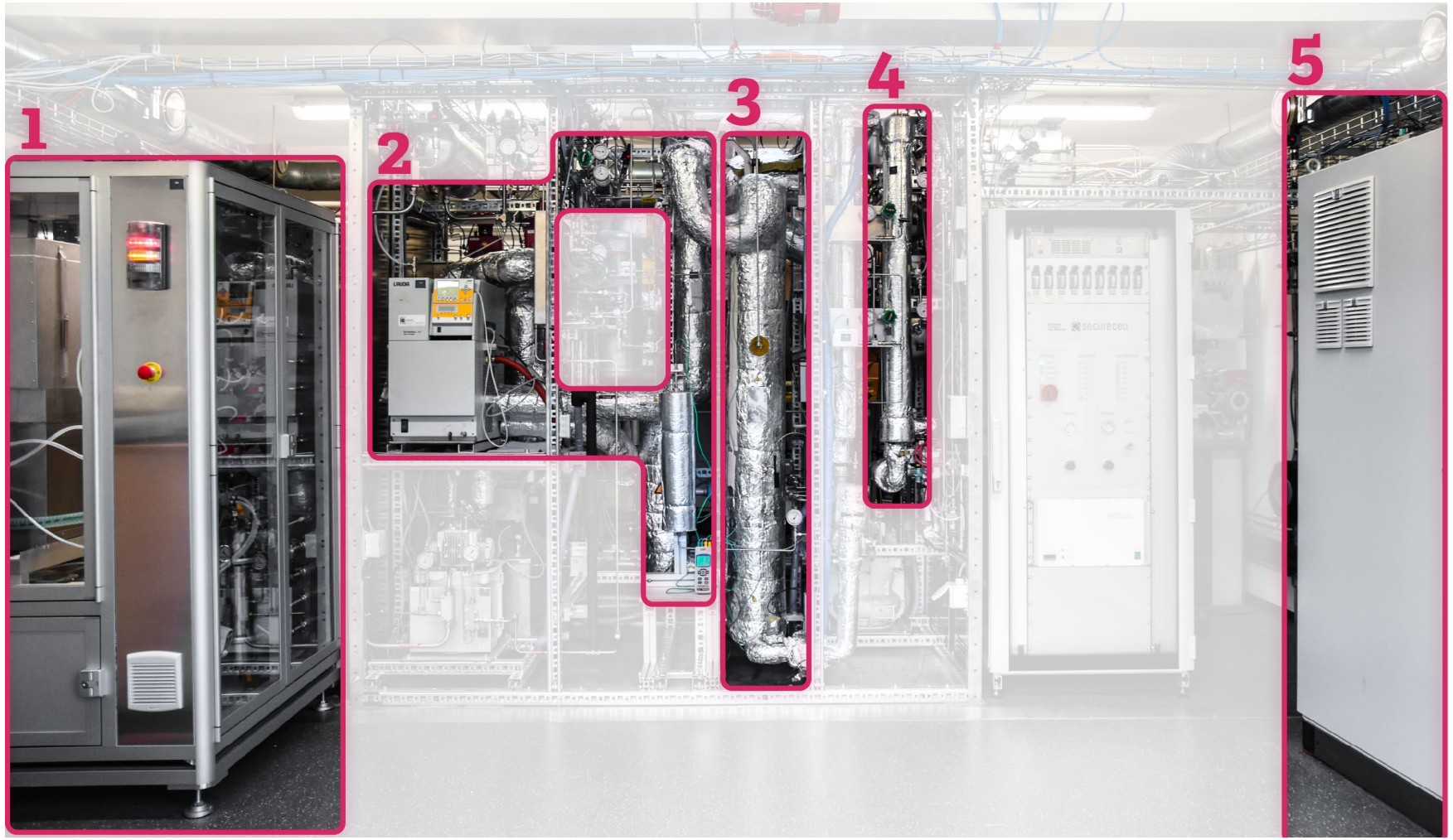

Silvan Schmid


Salvatore Oricchio


Luca Schmidlin

PiDo muss weg

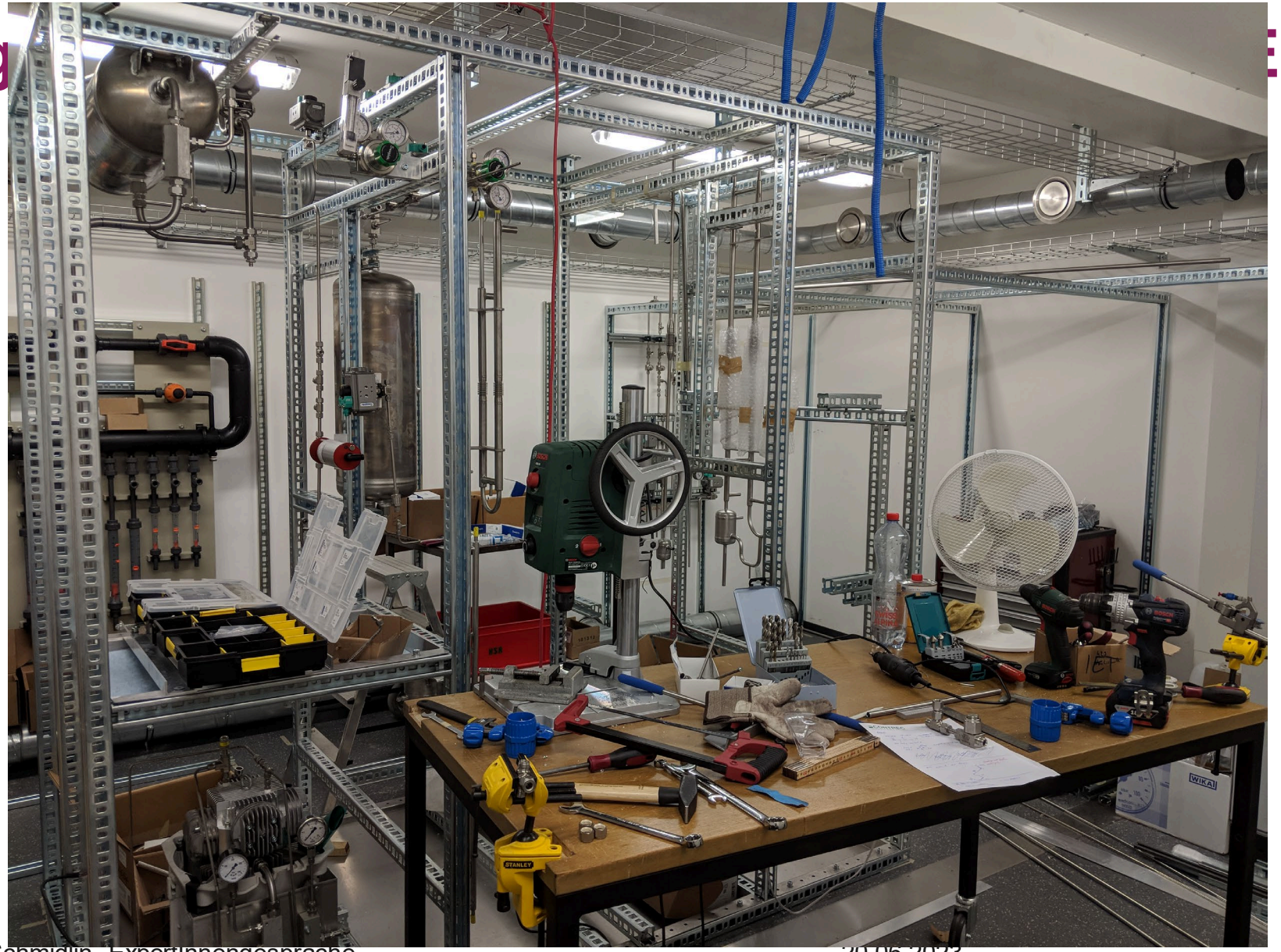
High Efficiency Power-to-Methane Pilot (HEPP)



1. SOEC
2. Thermo-Öl-System
3. Methanisierungsreaktor
4. Biogas-Membran
5. PEM-Elektrolyseur

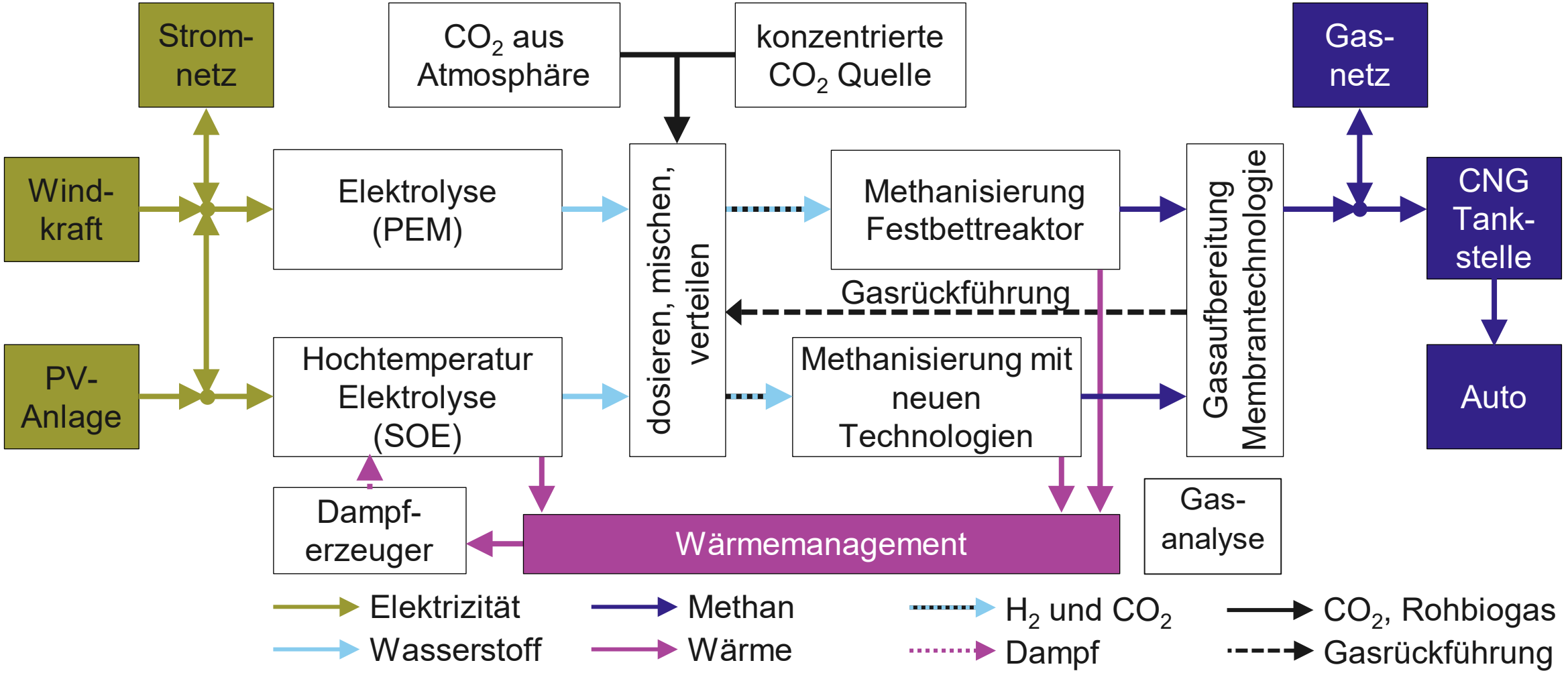
Forschungsplattform

Hig EPP)

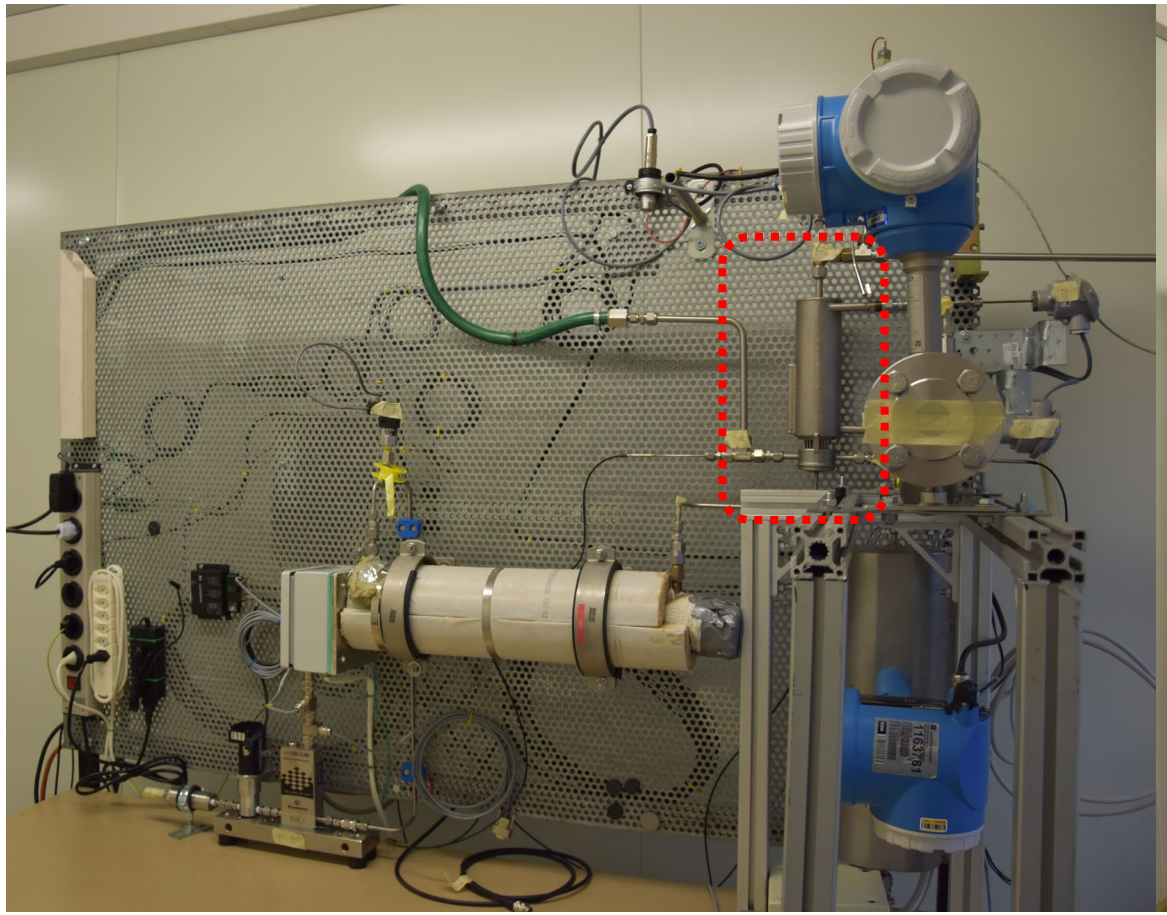


1. SOEC
2. Thermo-Öl-System
3. Methanisierungsreaktor
4. Biogas-Membran
5. PEM-Elektrolyseur

High Efficiency Power-to-Methane Pilot (HEPP)

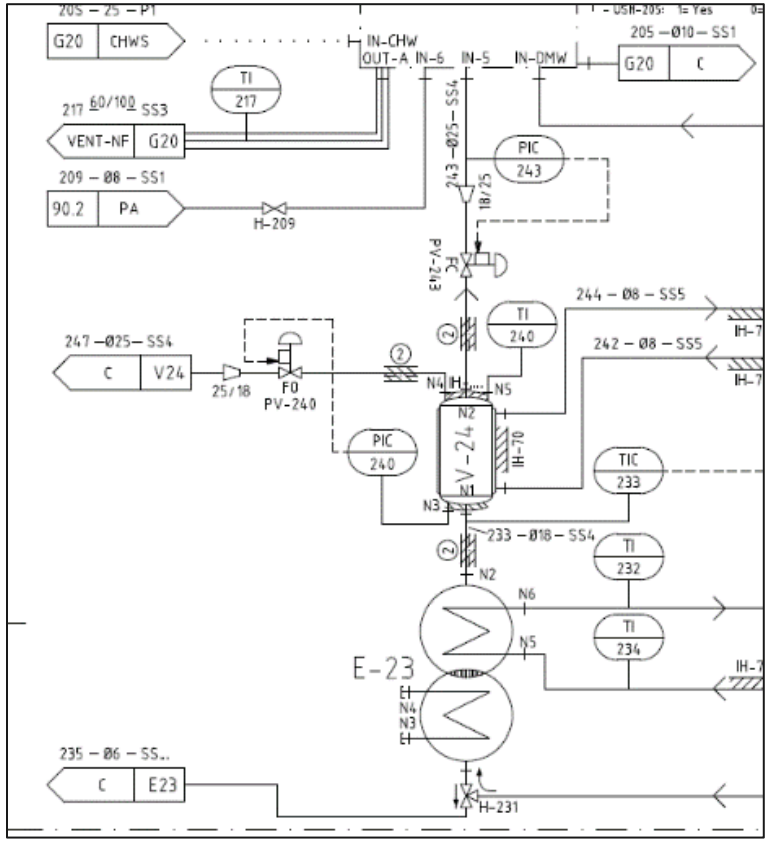


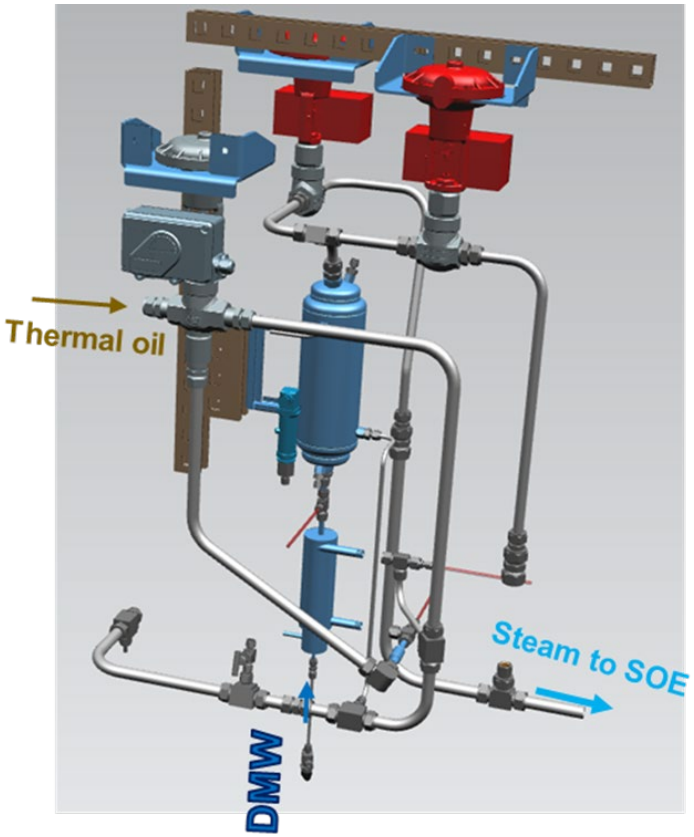
Vorversuche Dampferzeuger



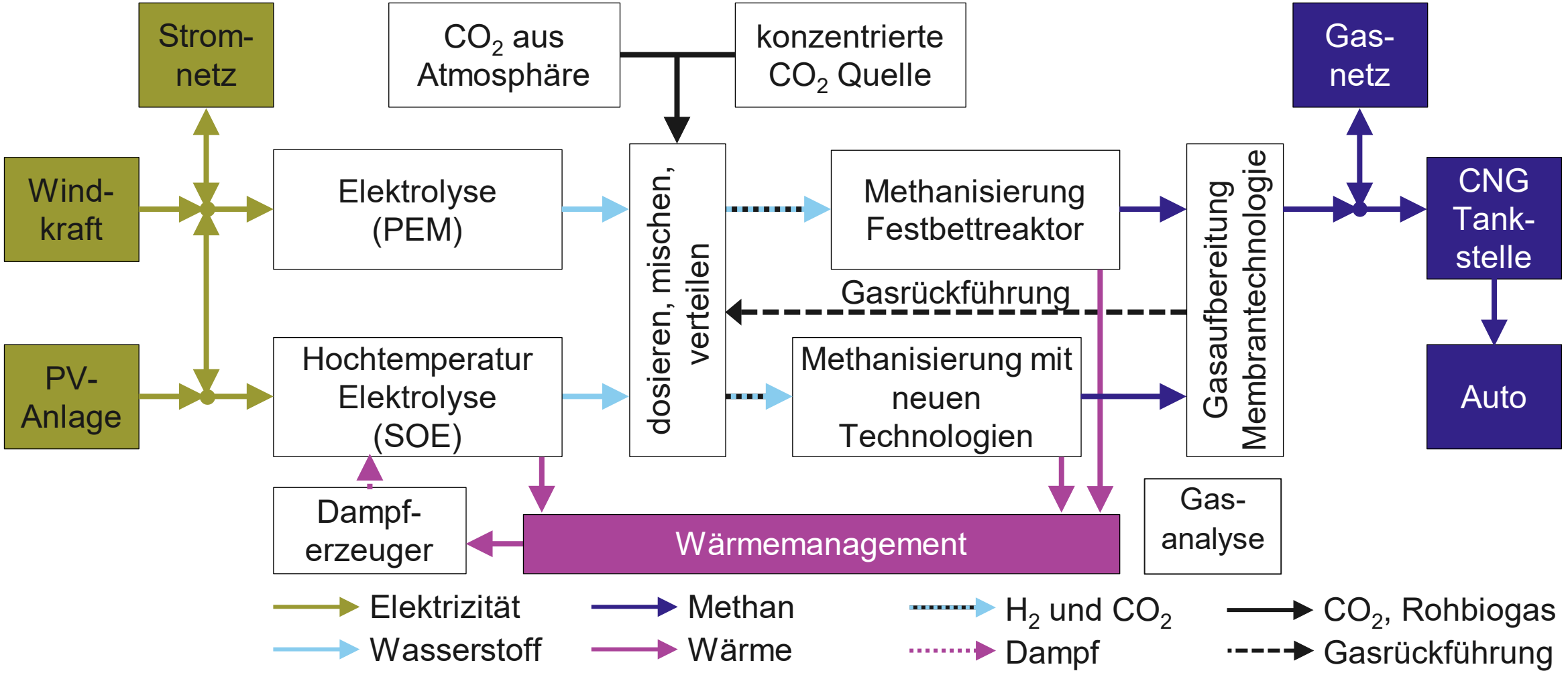
Status quo Dampferzeuger

- Erzeugung von 3,5 kg/h Dampf mit Temperaturen um die 200°C und mit Druckschwankungen unter 20 mbar, wie sie für die Speisung des Hochtemperaturelektrolyseurs erforderlich sind.

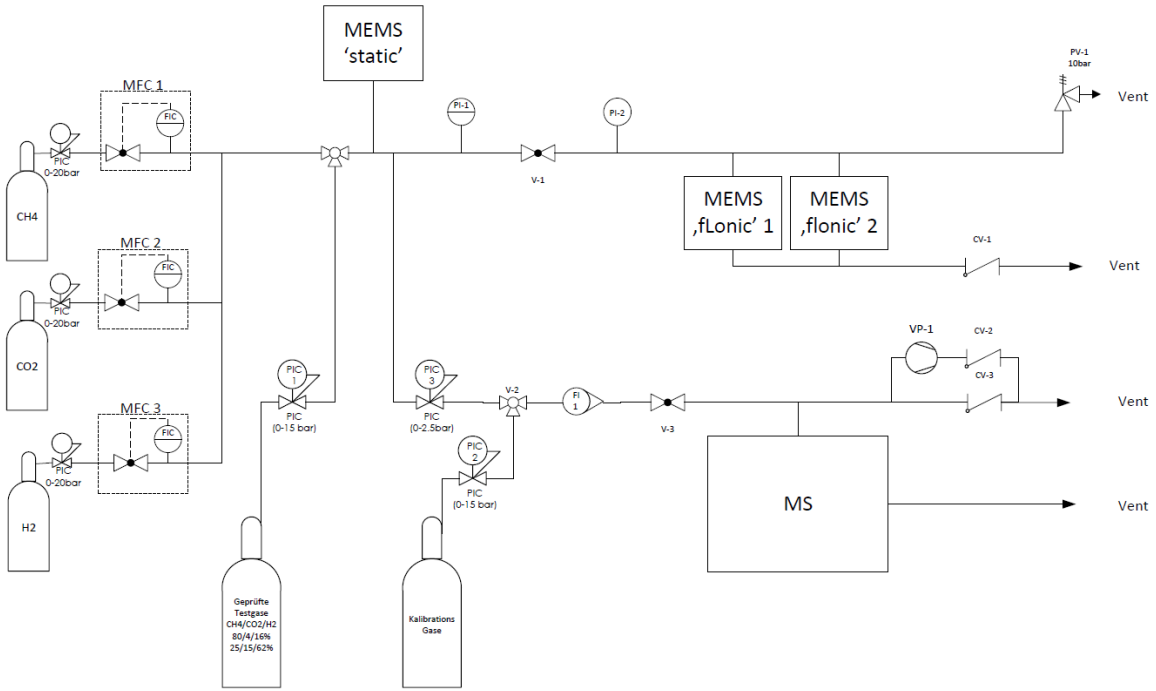


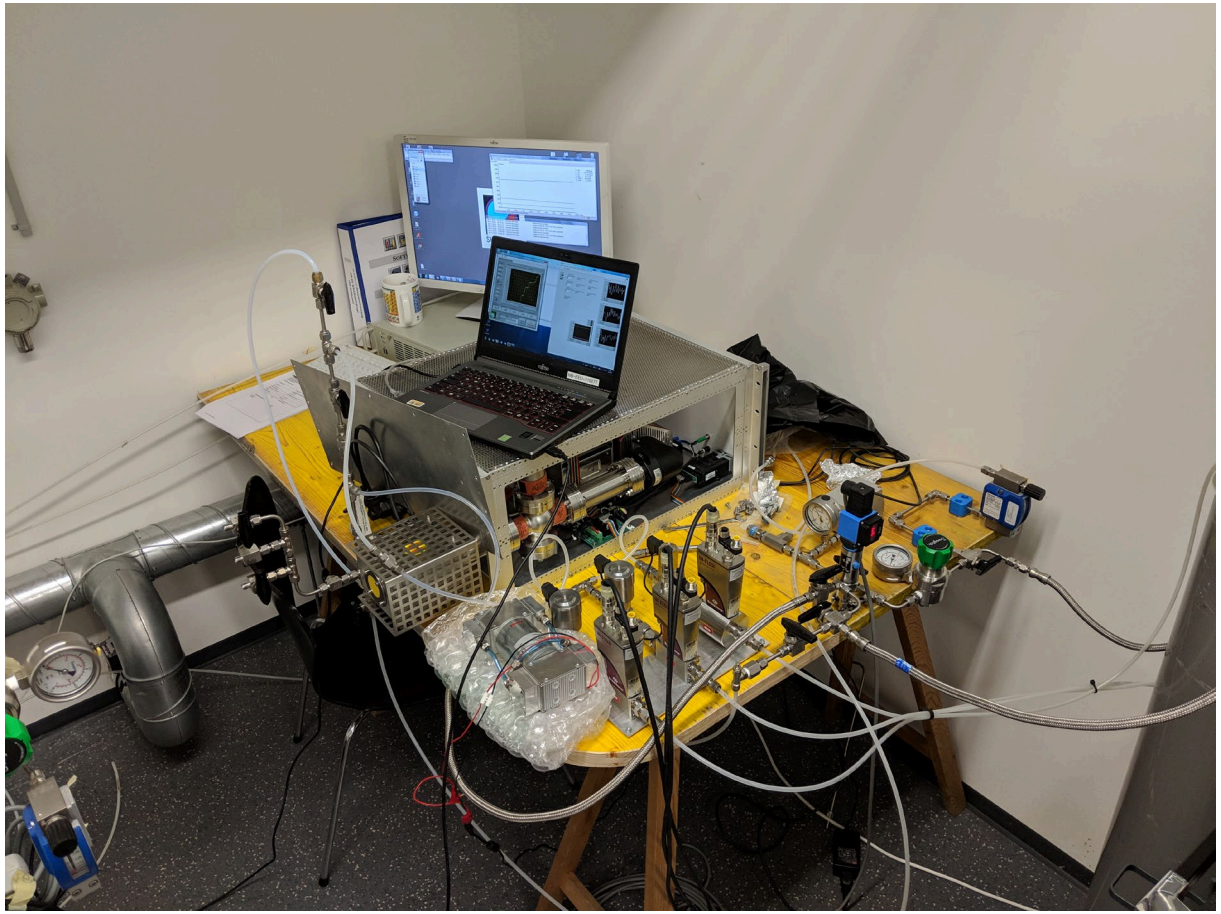


High Efficiency Power-to-Methane Pilot (HEPP)

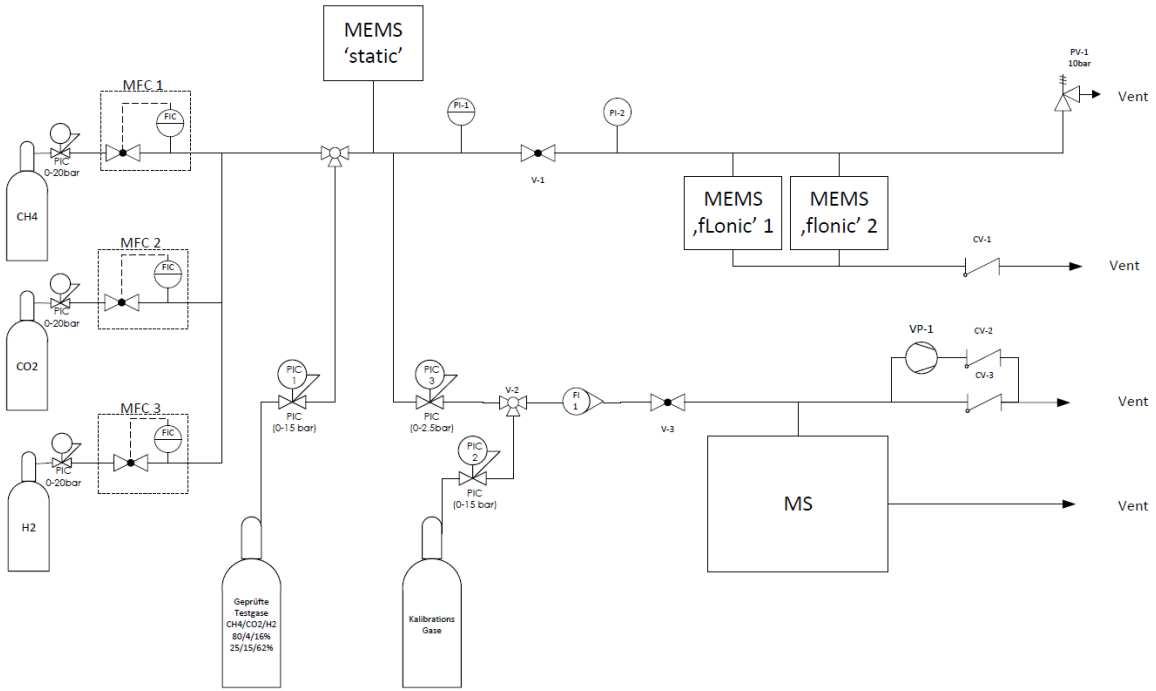


Vorversuche MEMS Sensoren

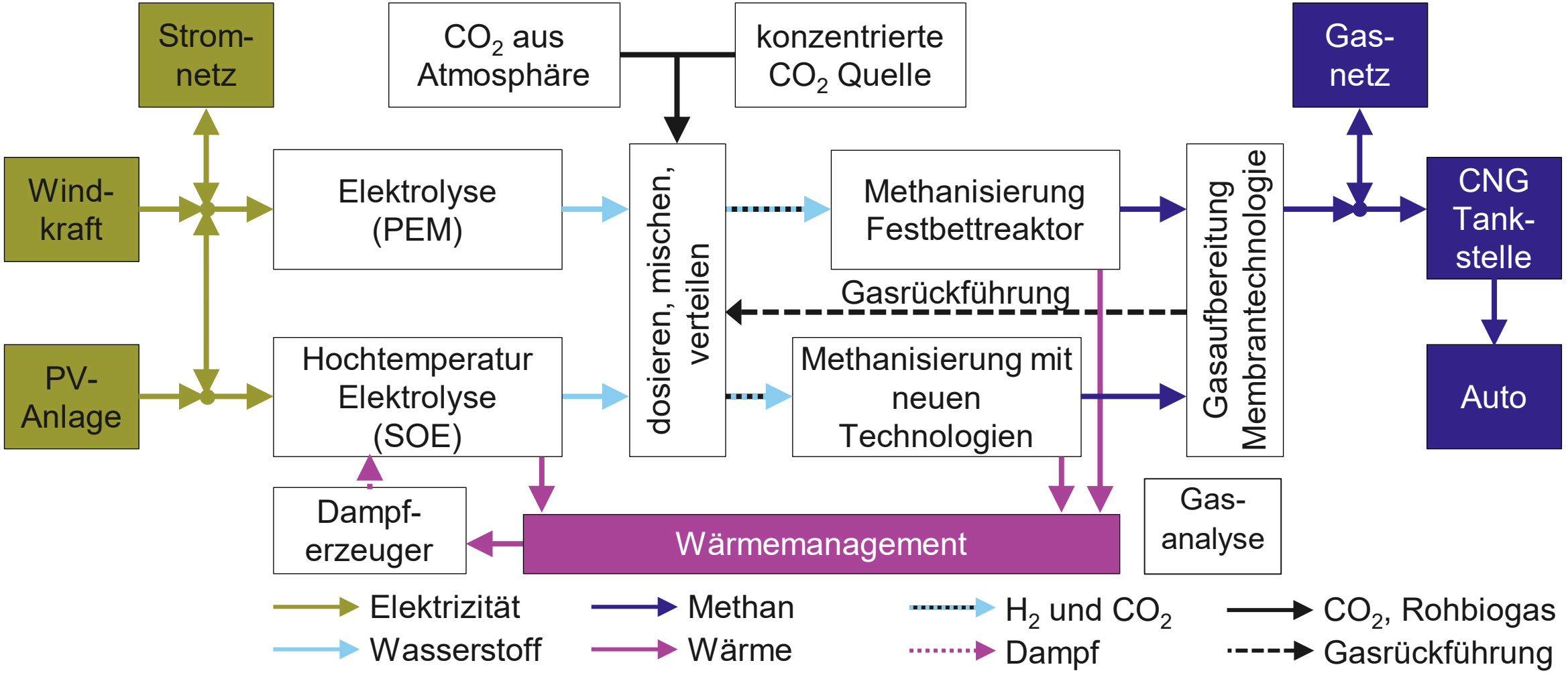




Vorversuche MEMS Sensoren



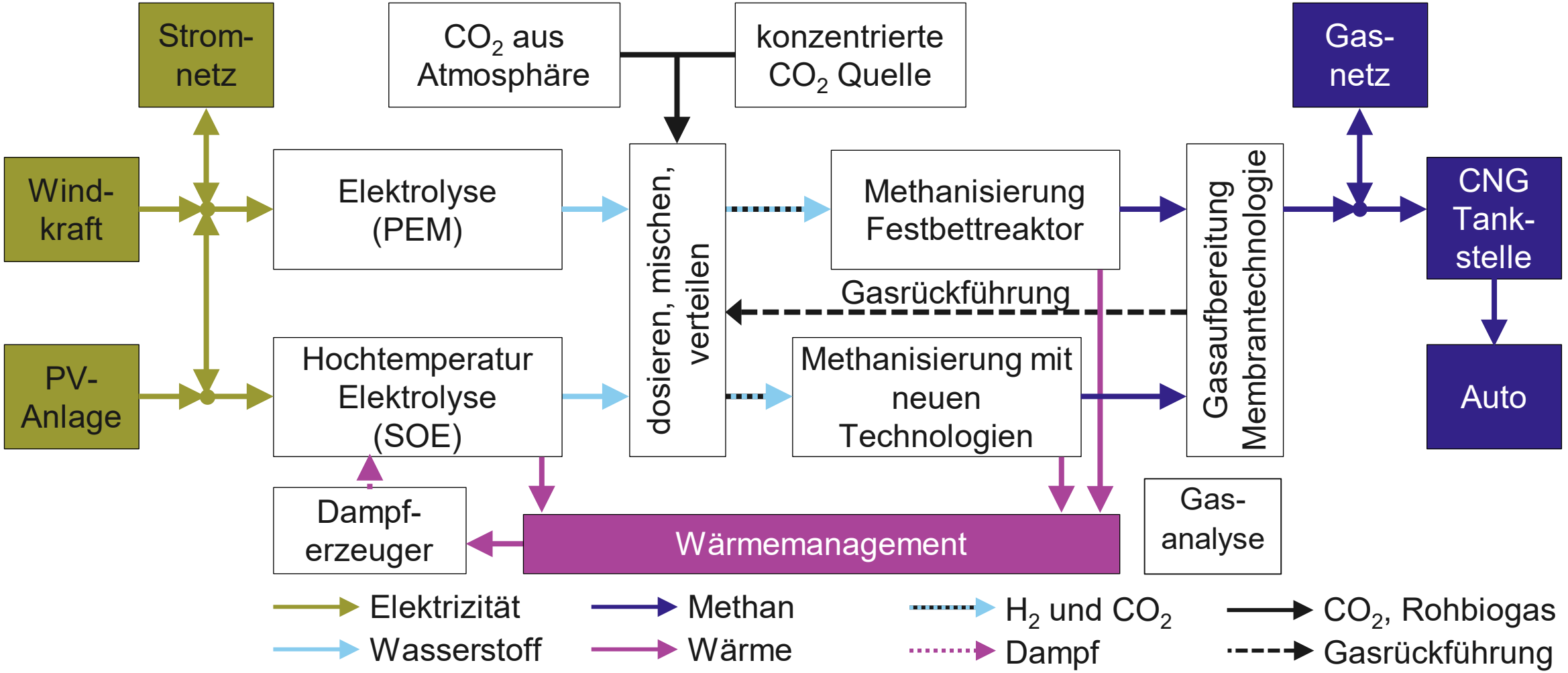
High Efficiency Power-to-Methane Pilot (HEPP)



OST

Vorversuche Gasmembran

High Efficiency Power-to-Methane Pilot (HEPP)

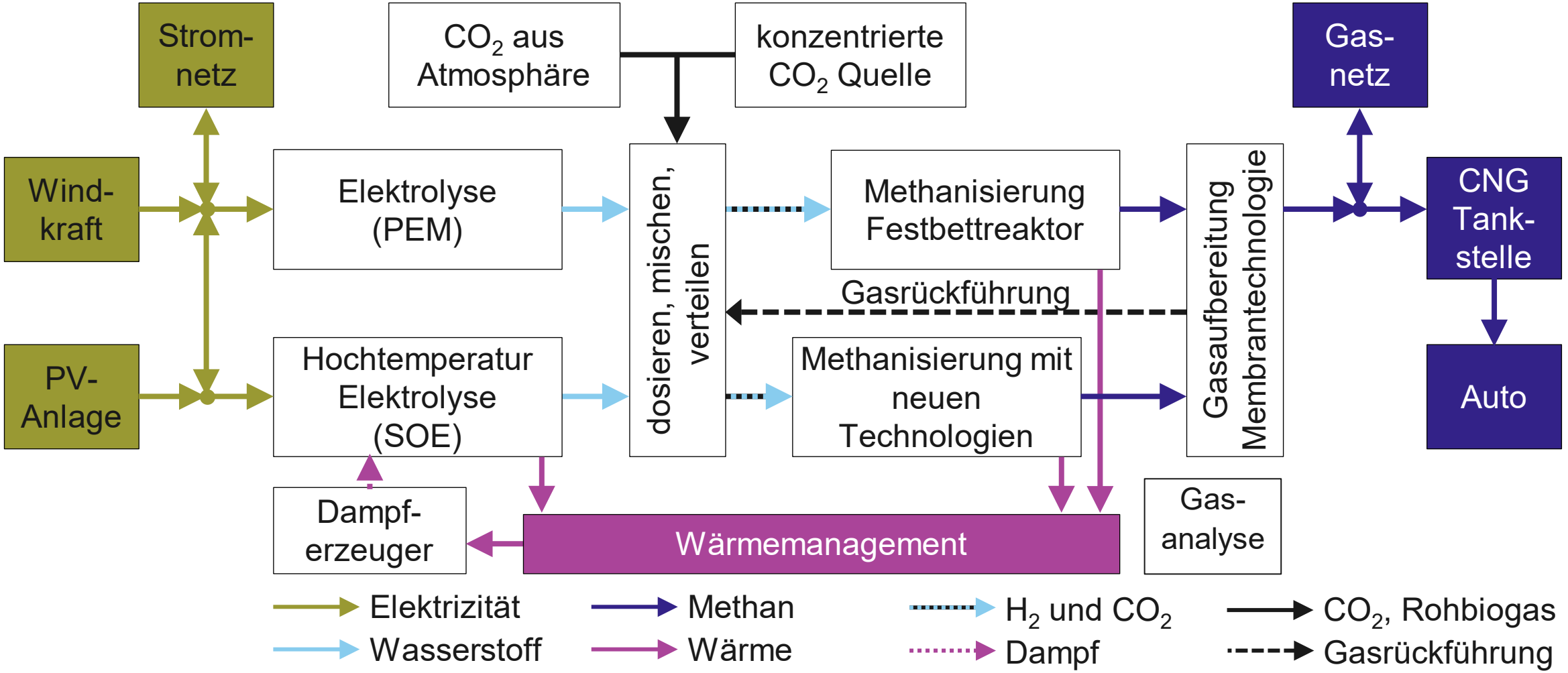


One plant, two operation modes

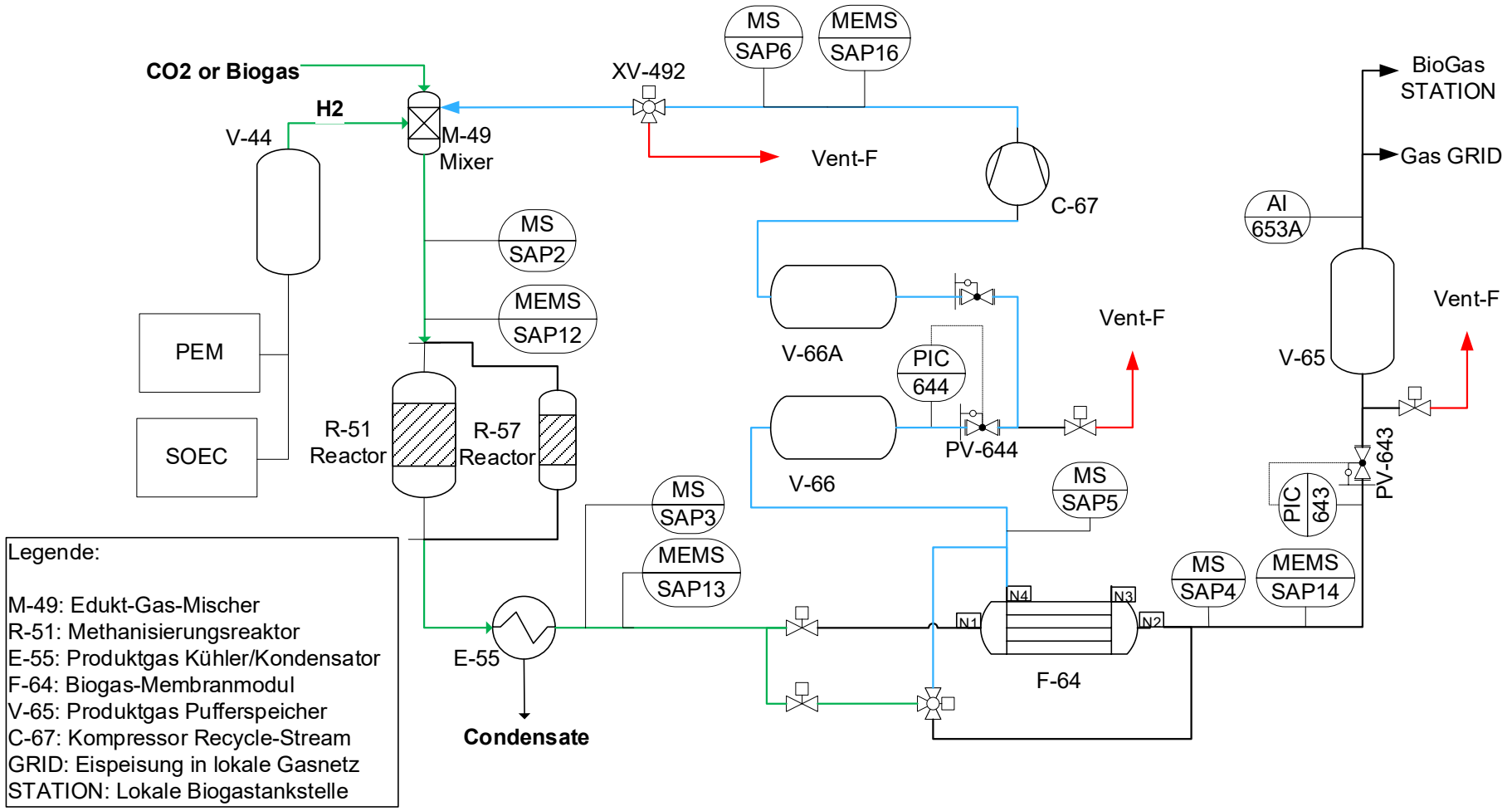
Operation mode SEM, Produktion

Operation mode SEM, Trocknung

High Efficiency Power-to-Methane Pilot (HEPP)

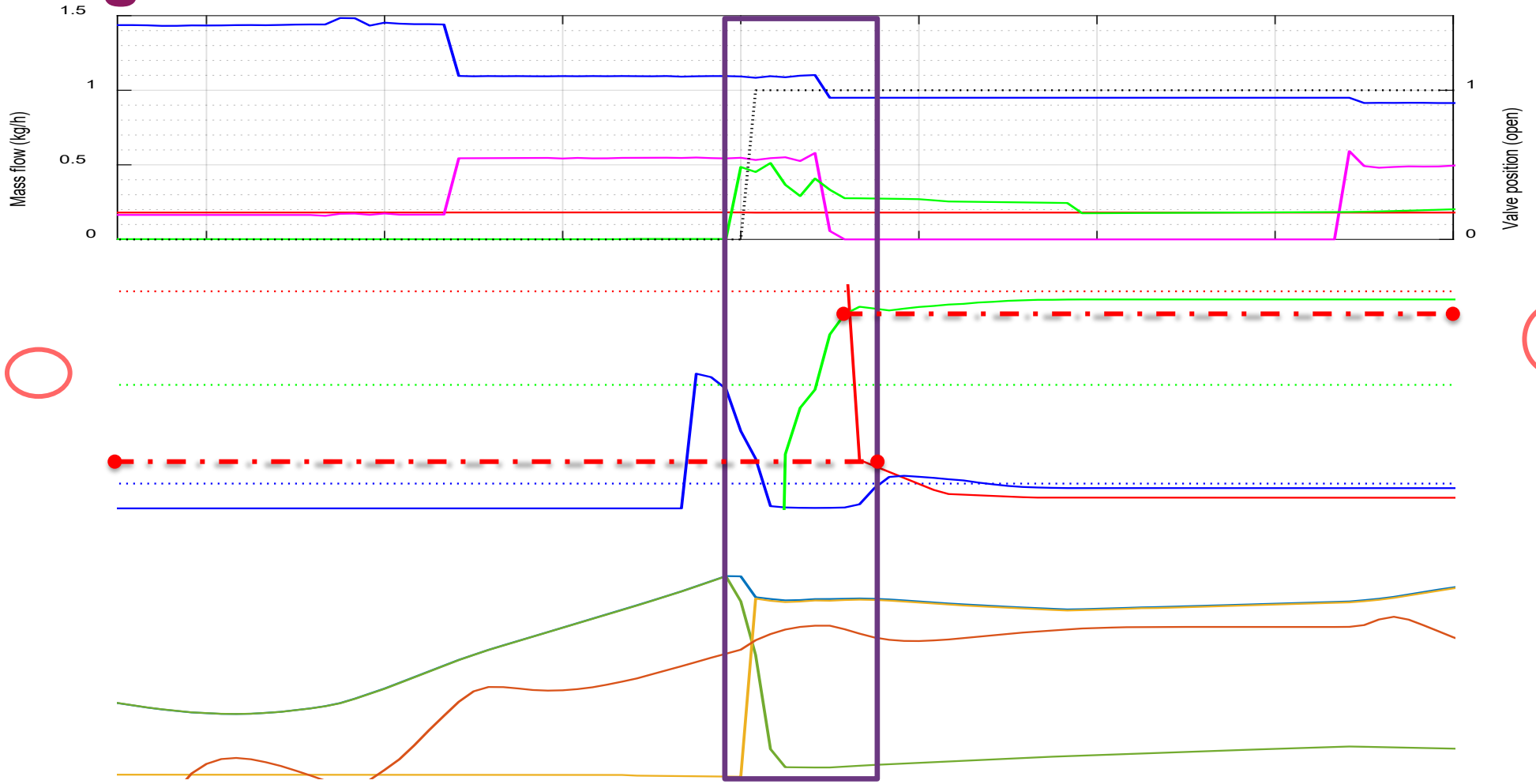


Anfahrstrategie min. Off-Gas



Anfahrstrategie min. Off-Gas

Anfahrstrategie min. Off-Gas



Partnerschaften im Projekt HEPP

OST Ostschweizer Fachhochschule

Unterstützt durch Rapperswil-Jona

EPFL

This project is co-funded by the European Union

Audi

apex

mems AG

Hariri Chemical Process Engineering CPE

EMERSON

Hitachi Zosen INOVA

zhaw School of Engineering IMPE Institute of Materials and Process Engineering

Swagelok

energie360°

ENERGIE INSTALLATION NETZE EWJR

ENERGIE ZürichseeLinth

IBG Engineering

erdgas regio

gaz energie

IG PtX

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Bundesamt für Umwelt BAFU

Innosuisse – Schweizerische Agentur für Innovationsförderung

Bundesamt für Energie BFE

erdgasobersee-linth transport

sgsw St.Galler Stadtwerke

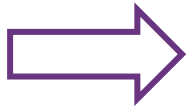
H2 Storage Swiss Competence Center for Energy Research

Steering Committee:

- Ernst Uhler, EZL
- Martin Landolt, Die Mitte
- Barbara Keller-Inhelder, SVP
- Marcel Dobler, FDP
- Peter Graf, SWSG
- Michael Bätscher, EWJR
- Bettina Bordenet, SVGW
- Daniela Decurtins, VSG
- Nadine Brauchli, VSE
- Arne Siemens, Audi
- Dominique Kronenberg, Climeworks
- Thorsten Harder, Burckhardt Compression
- OST

Vom IET zu AlphaSYNT

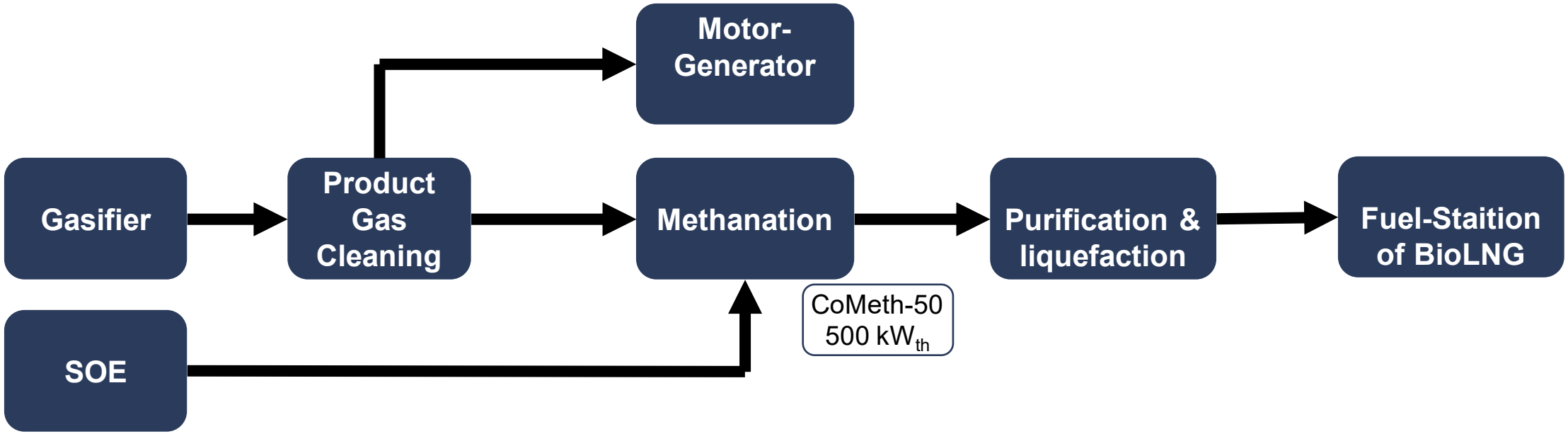
IET | Institut für Energietechnik



AlphaSYNT®
Swiss SynFuels

Projekt HYFUELUP

HYBRID BIOMETHANE PRODUCTION FROM INTEGRATED BIOMASS CONVERSION



- Performance: 500 kW_{SNG}
- Production capacity: 50 Nm^3_{SNG}/h
- Annual capacity: 300 t_{SNG}/a
- CO_2-Upcycling: 825 t_{CO2}/a
- Project duration: 2022 - 2026

Das Projekt **HYFUELUP** zielt darauf ab, einen innovativen Weg für die Biomethanproduktion in großem Maßstab aufzuzeigen, der auf der Integration von sorptionsgestützter Vergasung, Methanisierung über eine katalytische Wirbelschicht und einer Hochtemperatur-Elektrolyse beruht.

Projekt HYFUELUP

HYBRID BIOMETHANE PRODUCTION FROM INTEGRATED BIOMASS CONVERSION

The main demonstration site

Tondela (Viseu)
Portugal

- Retrofitting of an existing circulating fluidised bed (CFB) gasifier
- Biomethane production capacity of 500 $kW_{th\ LHV}$

Project partners and funding

HYFUELUP

BIOREF
Laboratório Colaborativo para as Biorrefinarias

University of Stuttgart
Germany

JM Johnson Matthey
Inspiring science, enhancing life

PAUL SCHERRER INSTITUT
PSI

CIRCLE MOLECULE

ΚΑΠΕ
CRES

Bioplat
BIOMASA PARA LA BIOECONOMÍA

AlphaSYNT®
Swiss SynFuels

dourogás
renovável

POLITÉCNICO
DE PORTALEGRE

LNEG

Funded by
the European Union

Project funded by

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs,
Education and Research EAER
State Secretariat for Education,
Research and Innovation SERI

Vielen Dank für die Aufmerksamkeit