DACMA
engineering and building
DAC machines

Driving net zero forward with high-quality DAC systems from Germany

May 2026

1. What is Direct Air Capturing (DAC)
   - DAC History
   - General
   - DAC vs. Point Source
2. Who is the DACMa?
   - History
   - Unique Selling Point
   - Projects
3. Use Cases – E-Fuel
   - Pegasus

WHAT IS DIRECT AIR CAPTURE?

A technology to extract CO2 directly from the ambient air at any location

Source: Arizona State University

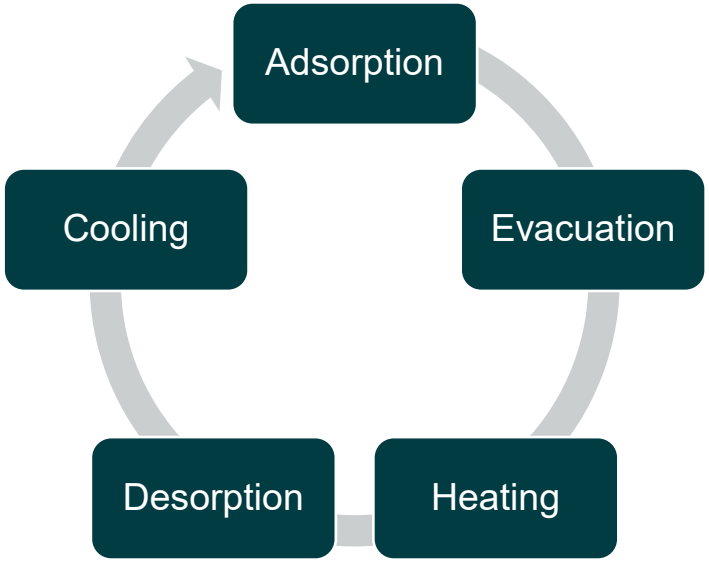
Prof. Klaus Lackner

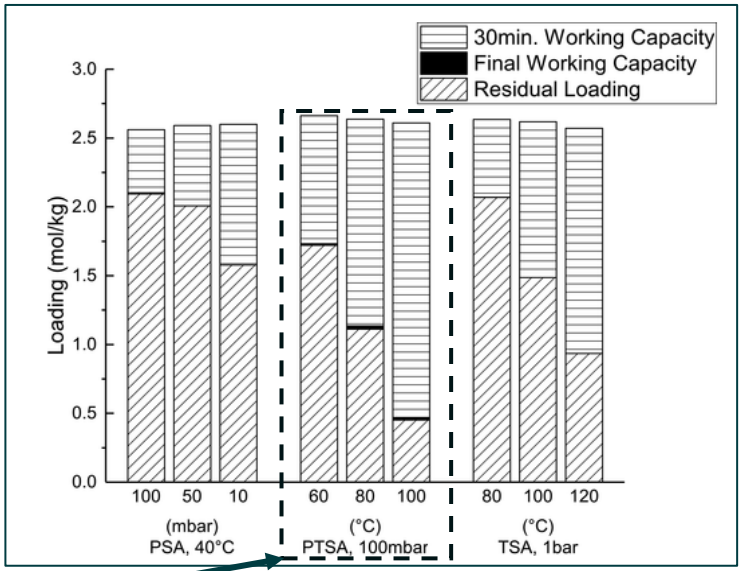
24th Annual Technical Conference on Coal Utilization & Fuel System, 1999

Title: Carbon Dioxide Extraction From Air: Is It An Option

Lackner, Klaus, Ziock, Hans-Joachim, and Grimes, Patrick. 1999. "Carbon Dioxide Extraction from Air: Is It An Option?". United States. https://www.osti.gov/servlets/purl/770509

Cycle of Pressure Swing Adsorption





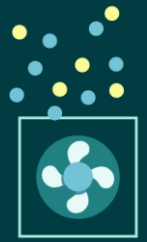
Pressure Temperature Swing Adsorption (PTSA) used to combine benefits of PSA and TSA

Source: Bos, M.J.; Vincent Kroeze, V.; Sutanto, S. und Brilman, D. W. F.: Evaluating Regeneration Options of Solid Amine sorbent for CO2 Removal. Ind. Eng. Chem. Res. 2018, 57, 11141−11153. 2018

Solid adsorbents enable low energy and water use – we lead this efficient class vs. competition

DACMA

1



Large fans draw in air from atmosphere

2

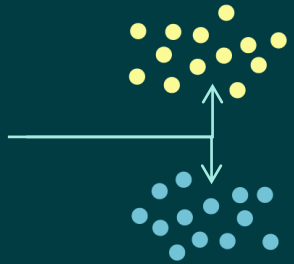
Filters containing engineered chemicals collect CO_2 from the air

3

The filter material is heated to release the captured CO_2

4

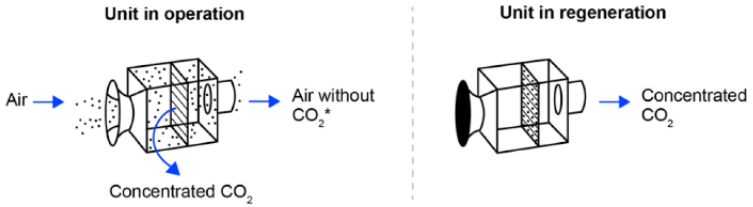
Lean-CO_2 air is released to the atmosphere



Concentrated CO_2 is stored (DACCS) or transformed into other materials (CCU)

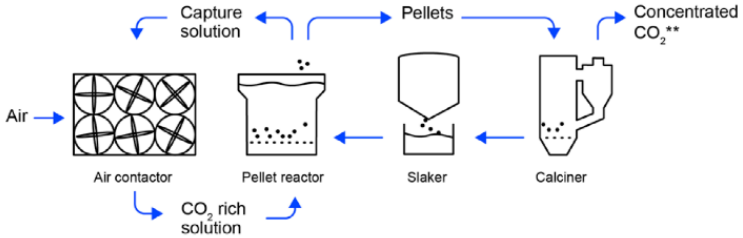
TECHNOLOGIES OF DAC

Solid DAC



	S-DAC (~80-100°C)
+	Water neutral process possible
+	Lower invest
+	Modular and scalable
+	Use of 100% renewable energies
+	Young technology with high potential
−	Higher energy per ton of CO_2
−	Higher maintenance required

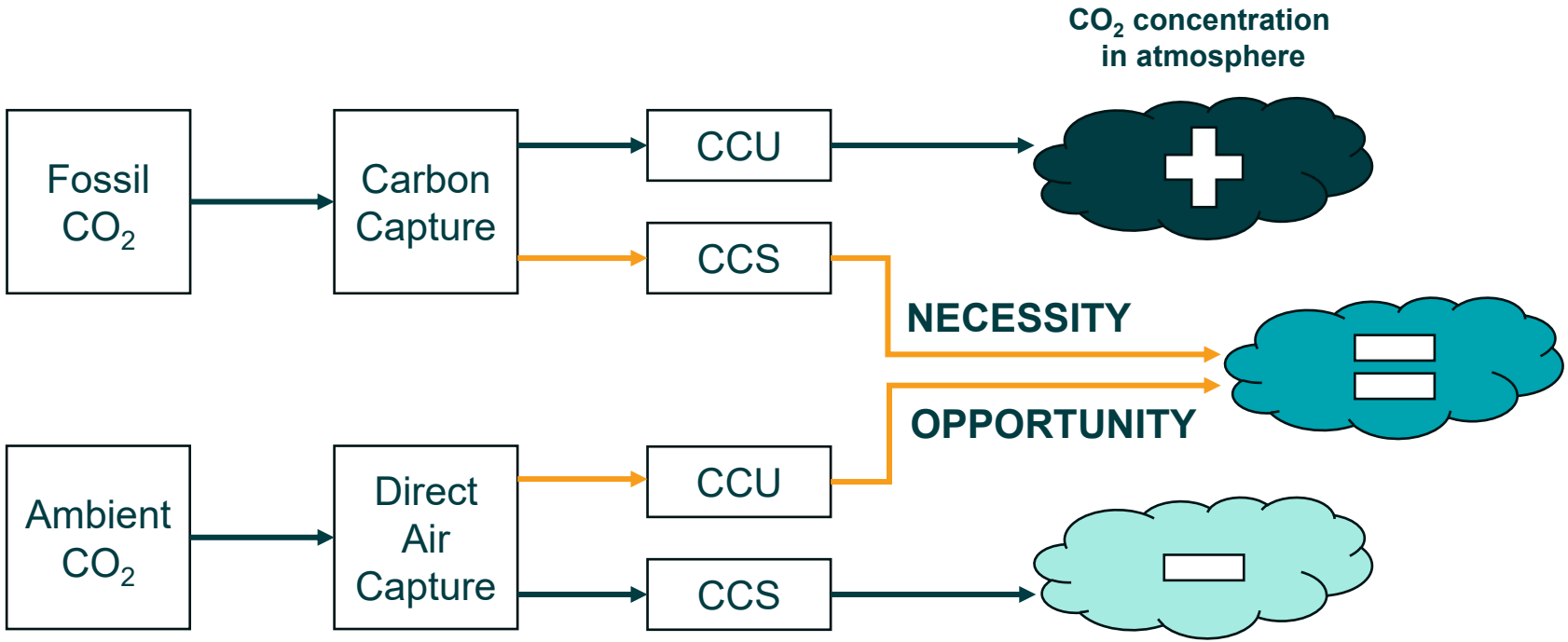
Liquid DAC



	L-DAC (~900°C)
+	Lower energy consumption per ton of CO_2
+	Large Scale Capturing
+	Established adsorbents
+	higher TRL (Technology readiness Level)
−	High water consumption (up to 50t/tCO_2)
−	High invest
−	Fossil fuel necessary for regeneration

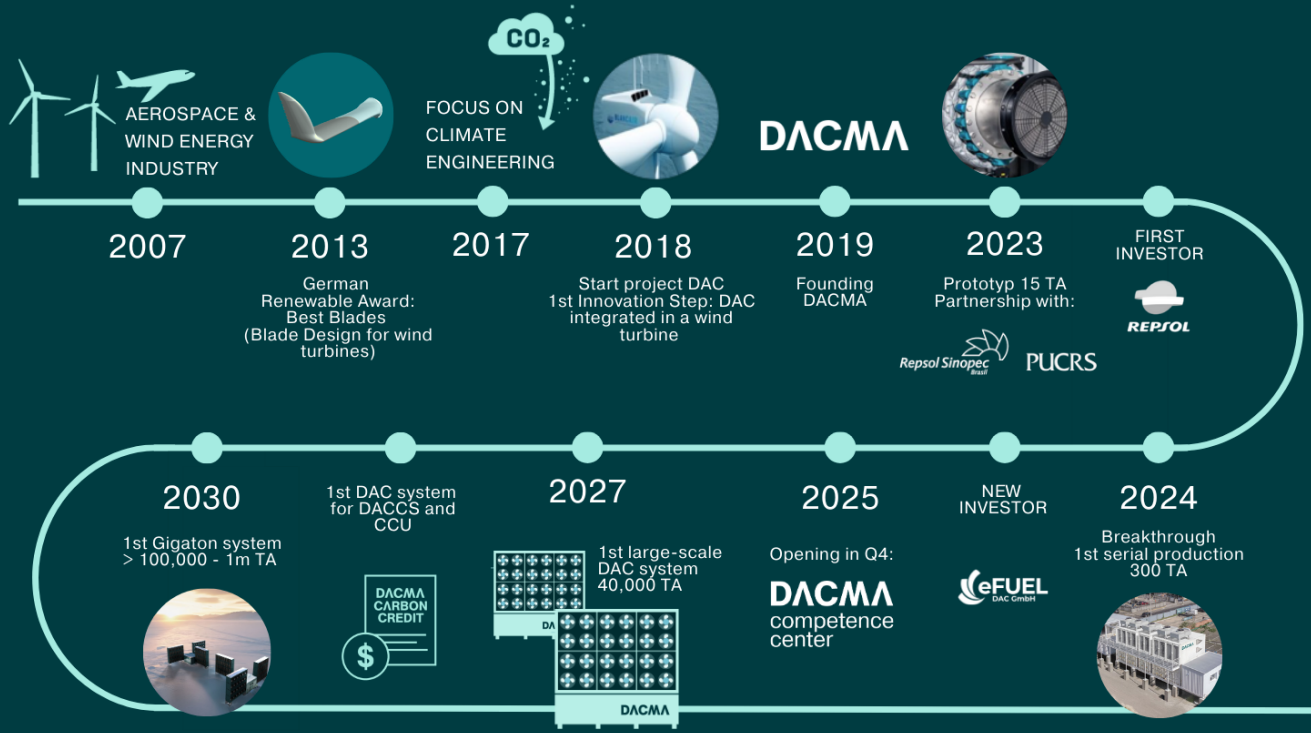
Source: International Energy Agency, 2022: Direkt Air Capture A key technology for net zero; www.iea.org

DAC vs. FOSSIL POINT SOURCE



DACMA is **Germany's No.1 manufacturer of modular Direct Air Capture (DAC) systems** and a global pioneer in commercial DAC deployment.
Our systems are capturing CO_2 for carbon capture utilization (CCU) and
Direct Air Carbon Dioxide Capture and Storage (DACCS).

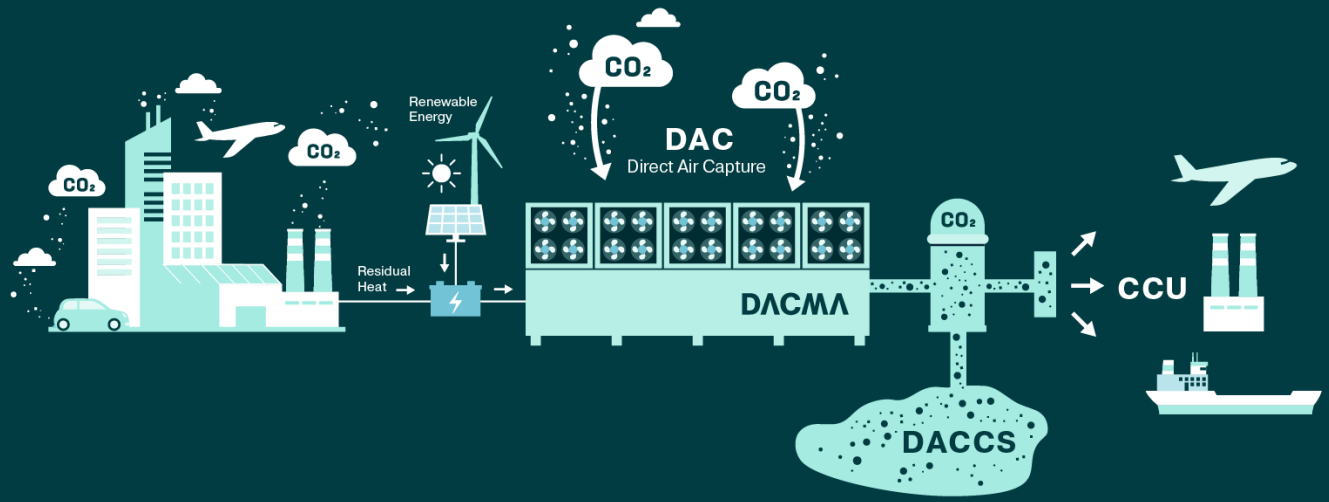
Our DNA and milestones



Across Industries:
From Aerospace to
Wind Power to DAC

We capture CO_2 for DACCS and CCU

Direct Air Carbon Dioxide Capture and Storage/ Carbon Capture and Utilization



Our low energy use DAC systems capture CO_2 from the ambient air for:

1. **DACCS:** supporting diverse decarbonization strategies
2. **CCU:** e-fuels, material, and industry

The DACMA advantages:

The No.1 manufacturer from Germany is one of the world's pioneers in the development and deployment of DAC systems

Modular design and scalable to Gigatons

Interchangeable adsorbents for continuous performance improvement

Patented reactor design with optimized air flow

DACMA guarantees high-quality, sustainable Carbon Credits (Voluntery market)

Transparent, industry-leading carbon removal standards

DAC technologies are designed for a large variety of climate conditions

Leading the CDR market - from DAC technology provider to a DACCS Operator

DACMA

status quo

from 2028 on

DAC Technology Provider

DACCS Operator

DACMA sells DAC systems to companies (B2B), that have an interest in operating DAC systems themselves in order to capture CO_2 for carbon capture storing (DACCS) or carbon capture utilization (CCU).

- **First DACCS plants for carbon credits** scheduled 2028 with a final capacity of 50,000 TPA.
- Revenue streams through **sale of carbon credits and sale of DAC systems**
- Service and maintenance contracts

DACMA's product roadmap

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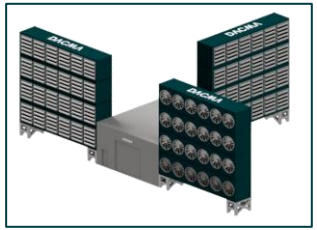
2023	2023-2025	2026-2027	2030
Prototype	Gen 1	Gen 2	Gen 3
			*Concept in development*
Size: 15 TPA	Size: 300 TPA	Size: 43,000-100,000 TPA	Size: 1,000,000 TPA
DACMA's 1st prototype validated its core DAC technology and laid the groundwork for future scale-up	The 300 TPA industrial DAC system delivered in 2024 (Brazil) is built from Gen 1 units (5 x 60 TPA)	Scale-Up Project at Canada's Second-Largest DACCS Facility	DACMA targets full megaton-scale rollout, enabling meaningful global climate impact

We scale fast with projects around the globe from 60 up to 50,000 TA

DACMA

ALASKA 50,000 TA

CANADA 43,000 TA

KIT H2MARE 60 TA

PEGASUS 60 TA

KIT SECO 30 TA

PUCRS 300 TA

AUSTRALIA 5,000 TA

STATUS QUO

375 TA in operation

Commercial-scale units (5,000–10,000 TA) in development

Mega DAC plants (up to 1,000,000 TA) by 2030

Case in point

PUCRS – First industrial Unit in South America

Deployment in tropic Zone

Customer	Repsol Sinopec Brasil & PUCRS
Location	Porto Alegre, Brazil
Size	300 TPA
Energy source	Solar PV
CO2 usage	Geological storage
Project completion	October 2024

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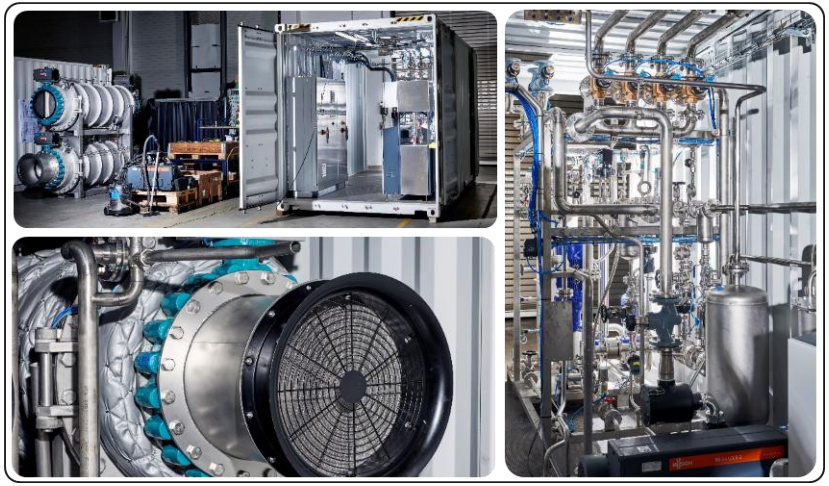
300TA System – Porto Alegre

300TA System – until delivery



Case in point

H2mare

Strong Offshore conditions

Customer	Karlsruhe Institute for Technology
Location	Helgoland, Germany
Size	60 TPA
Energy source	tbd
CO2 usage	Ptx, water recovery
Project completion	September 2025

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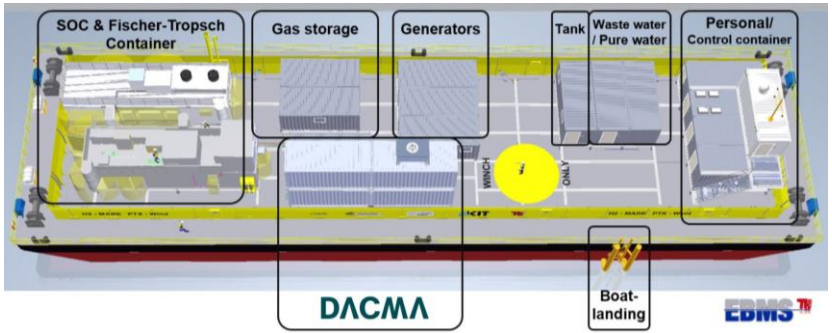

Case in point

Pilot Plant Gen2

In sub-polar Zone

Customer	Deep Sky Climate
Location	Alberta, Canada
Size	600 TPA
Energy source	Solar and Wind
CO2 usage	Geological storage
Project completion	Q1 2027

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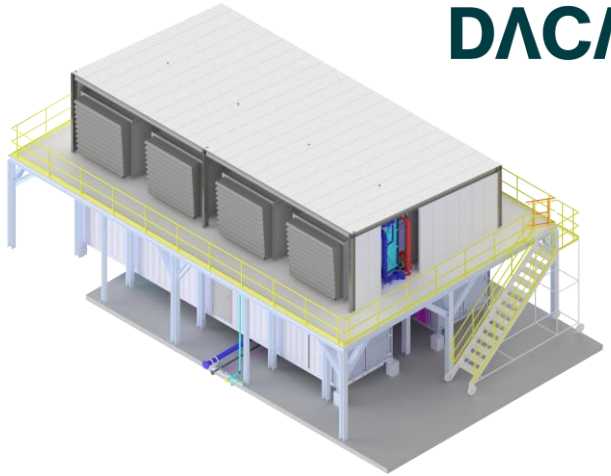


600 TPA – Pilot Plant Gen2 – Deployment at Deep Sky Alpha Site

Picture – Alpha Site Deep Sky

Visit the DACMA Competence Center in summer 2026 in Hamburg

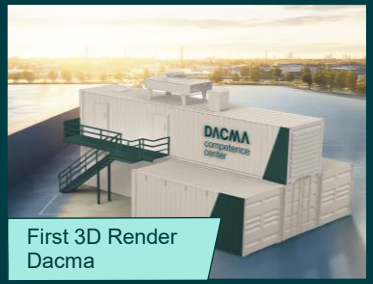
The DACMA Competence Center is the R&D facility of DACMA GmbH, located at the port of Hamburg.

With its location at one of Europe's key industrial hubs, the Center serves as a platform for technological innovation, pilot deployment and international collaboration in DAC projects.

DACMA Competence Center (DCC) in Hamburg

DACMA

From first 3D Render to first Research Project



First 3D Render Dacma

August 2025

Groundbreaking ceremony

December 2025

Arrival at Site

February 2026

Construction 1st container

March 2026

Construction 2nd Container

April 2026

Construction Stairs and 3rd Container

May 2026

PEGASUS
LOTHER GRUPPE
eFUEL
TUHH
DACMA engineering and building DAC machines
EUROPEAN ENERGY

Start of Pegasus Research Project with excellent Consortium

Q2'26

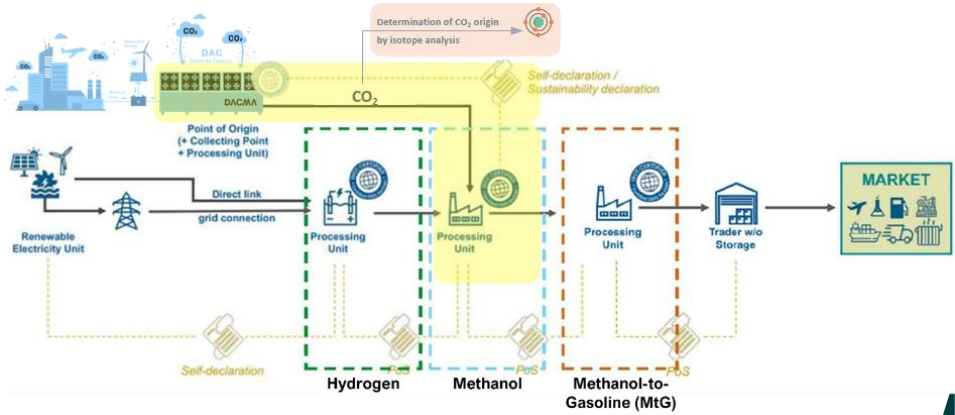
Research Project - PEGASUS

PEGASUS Research Project

"Pioneering Emissions to Green Air Solutions Unique and Sustainable Methanol Production"

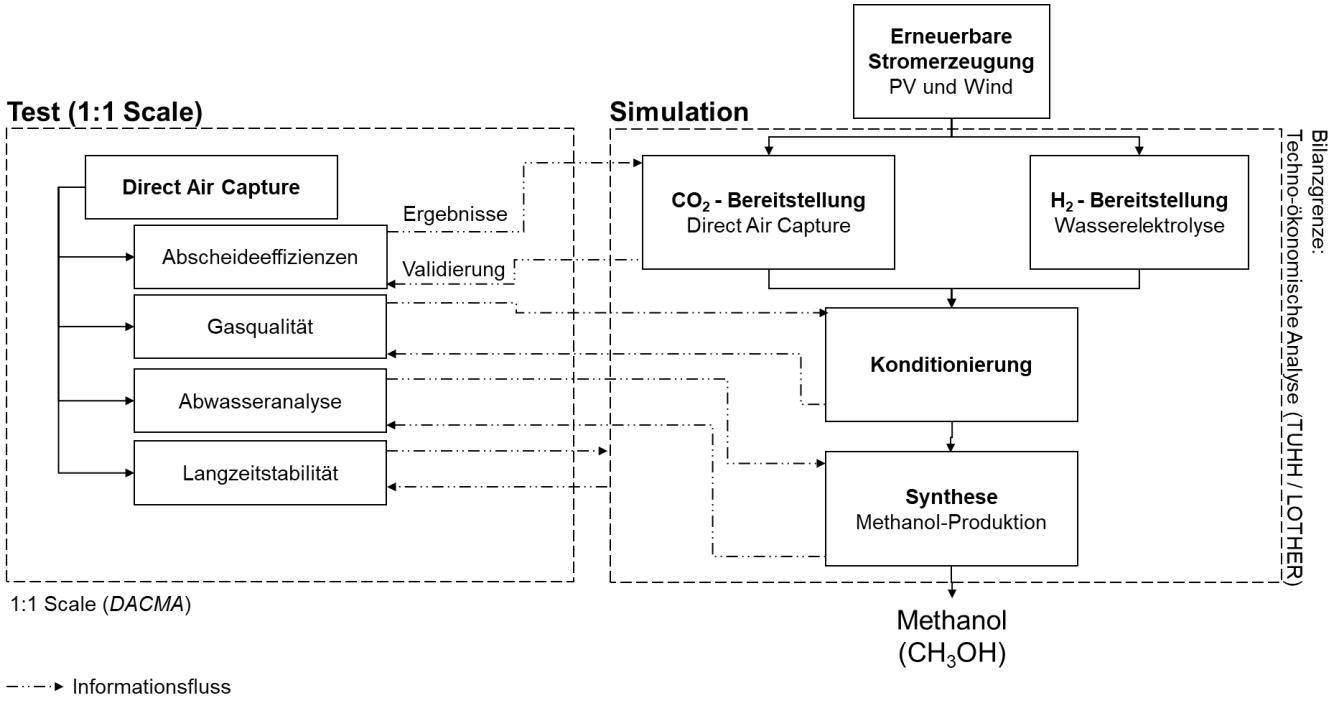
Research Partner	E-Fuel GmbH, Technical University Hamburg, Lother GmbH, European Energy
Location	Hamburg, Germany
Challenge	Non-fossil CO_2 sources are limited in availability and often not cost-competitive at industrial scale.
Objective	Develop an integrated system for climate-neutral eMethanol production using Direct Air Capture (DAC) CO_2 and green hydrogen
Scope	-Experiments at the DCC (DAC) -Simulations for the production of e-Methanol (CCU)

Project Partner – Pegasus Project



Positioning into value chain in the production of e-Fuels

PEGASUS Research Project



Schematic – Research Project

We are backed with strong investors and work with global partners

DACMA

investors:

REPSOL

eFUEL DAC GmbH

partners & associates:

PUCRS

Repsol Sinopec Brasil

KIT Karlsruher Institut für Technologie

HAMBURG BLUE HUB

HAMBURG AVIATION Member

Renewable Energy Hamburg

DACStorE

SUSTAINABLE ENERGY HUB

Direct Air Capture Coalition

FuE BSFZ

TUHH Hamburg University of Technology

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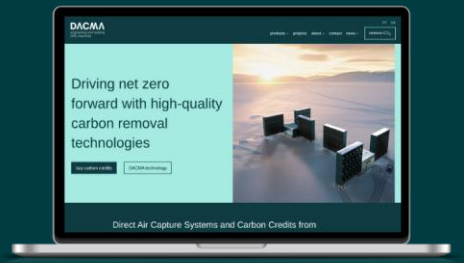

Thank you!

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