Our mission

Turning sunlight into fuel

We contribute to a zero-emissions transportation sector by replacing fossil fuels with carbon-neutral solar fuels.
Global CO₂ emissions are rising

Transportation: 3 billion tons of fuel

Liquid fuels are here to stay
The solution: solar fuels

SUSTAINABLE alternative to fossil fuels

SCALABLE to cover global demand

COMPATIBLE with existing infrastructure
Let’s close the carbon cycle.

Our vision
Synhelion

TURNING SUNLIGHT INTO FUEL.

Concentrated solar system delivers high-temperature process heat.

Video: Solar tower, IMDEA Energy Institute, Móstoles, ES
Synhelion uses solar heat to convert CO₂ and H₂O into synthetic fuels. We call them solar fuels.
The 3 innovation fronts

SOLAR RECEIVER
- High-temperature process heat
- 5 patent filings
- 1 publication

THERMOCHEMICAL REACTOR
- Syngas production
- 5 patent filings
- 14 publications

THERMAL ENERGY STORAGE
- 24/7 heat delivery
- 4 patent filings
- 5 publications

Turning sunlight into fuel.
A record-breaking path to market

2014
World’s first solar jet fuel from H₂O and CO₂ in the lab

2019
World’s first carbon-neutral fuels from air and sunlight

2019
Medium-scale demonstration under real field conditions

2020
Full-scale demonstration of key components
2021: Integrated system

Demonstration of solar syngas production at industrial scale on solar tower of DLR

Picture: Solar tower, German Aerospace Center, Jülich (DE)
Main specifications

- **1'000 m² mirror area**
- **250–500 kW solar input power**
- **10'000 l/y fuel demo batches**

Status: fully financed

Construction / commissioning: 2022 / 2023

Customer: Zurich Airport

Supported by: Federal Ministry for Economic Affairs and Energy on the basis of a decision by the German Bundestag
Synhelion roadmap

2021-2023

FIRST INDUSTRIAL PLANT
Building an industrial-scale plant to start fuel production
Capacity: ~10'000 L/y

2023-2025

FIRST COMMERCIAL PLANTS
First two commercial fuel plants
Capacity: 2 Mio L/y

2025-2030

CAPACITY RAMP-UP
Increase of plant size and installation of new plants
Target total capacity: 0.7 Mt/y

2040

TOWARD NET ZERO
Ramp-up of production capacity
Target total capacity: 40 Mt/y

= 50% of Switzerland’s jet fuel consumption

= 50% of European jet fuel consumption
Core team

Turning sunlight into fuel.

Total: 20 FTEs
Partners & key customers

en | Cemex | Wood | SMS Group

Lufthansa | Swiss | Zurich Airport | amag

ETH Zürich | York | Swiss Confederation | Federal Ministry for Economic Affairs and Energy

SUPSI | Idea | University of Florida | on the basis of a decision by the German Bundestag

Turning sunlight into fuel.
Solar fuels are the most

AFFORDABLE

EFFICIENT

SCALABLE

ECO-FRIENDLY

solution for clean, long-distance transportation.