

# Project Overview

The **MENA-Fuels** project analyses which new trade relations can emerge between the MENA region and Germany (and the EU) with regard to synthetic fuels or their precursors.

To this end, the **potential demand for these fuels in Germany up to the year 2050** will be analysed along different scenarios, and a holistic approach will be applied to assess which technology paths are suitable for the production of these fuels.

In a next step, the **potentials of the production and transport of electricity, hydrogen, intermediate products or fuels from the MENA region** are analysed and evaluated. In addition, an in- depth analysis will be carried out as part of **three country-case studies** in the MENA region.

Further on, **international trade relations as well as the macroeconomic, socio-economic and ecological effects** of synthetic fuel strategies on Germany and the MENA region will be analysed.

The project thus provides orientation knowledge for ventures that envisage the MENA region as a potential partner for synthetic fuels. The results obtained can support decision-makers in making reliable choices about the use of their resources.

## Project Duration

December 2018 – March 2022

## Funding Programme

The **MENA-Fuels** project is part of the cross-program funding initiative "Energy transition in the transport sector: sector coupling through the use of electricity-based fuels " of the Federal Ministry for Economic Affairs and Energy (BMWi).

# MENA FUELS

## Contact

Project coordinator:

**Dr. Peter Viebahn**

Wuppertal Institute for Climate, Environment and Energy gGmbH

Department Future Energy and Industry Systems

Doeppersberg 19, 42103 Wuppertal, Germany

Phone: +49 202 2492-306

[peter.viebahn@wupperinst.org](mailto:peter.viebahn@wupperinst.org)

## Cooperation Partners

**Dipl.-Ing. Jürgen Kern**

German Aerospace Center (DLR) e. V.

Institute of Engineering Thermodynamics

Phone: +49 711 6862-8119

[juergen.kern@dlr.de](mailto:juergen.kern@dlr.de)

**M.Sc. Wi.-Ing. Juri Horst**

IZES gGmbH – Institute for Futureenergy- and Material-flow-systems

Department Energy Markets

Phone: +49 681 844972-37

[horst@izes.de](mailto:horst@izes.de)

Further information can be found on our website:

[wupperinst.org/MENA-Fuels](http://wupperinst.org/MENA-Fuels)



Funding code 3EIV181A-C



Supported by:



on the basis of a decision by the German Bundestag

# Research Project

# MENA FUELS

Roadmaps for the Generation of Sustainable Synthetic Fuels in the MENA Region for the Decarbonisation of Traffic in Germany



## Background



The future of mobility in Germany and the EU is characterized by a diverse portfolio of technologies and solutions. Besides e-mobility, the use of synthetic fuels could be a promising option.

The production of large quantities of synthetic fuels (and chemicals) requires significant quantities of low-cost renewable energy. Especially the sun- and wind-rich countries of the MENA region with their large renewable energy potentials are suitable locations for the production of synthetic fuels and their precursors. Moreover, trade relations and infrastructures already exist with many countries on which can be built.

Yet, which potentials are available in the individual states? At what cost are the resources available? Which transport structures are needed? Which effects does the import have on value creation both in Germany and in the MENA states? Which interest do the states of the MENA region have to use their renewable energy potentials for domestic supply, but also for export? Which competitors are to be expected outside the MENA region and the EU?



Middle East and North Africa (MENA)

## Project Content



### Project Objective

In light of these questions, the **MENA-Fuels** project analyses to what extent the MENA region (Middle East and North Africa) can be a strategically important trading partner in supplying Germany (and the EU) with synthetic fuels or their precursors.

### Thematic Focus

#### Sustainability assessment of synthetic fuel paths

Synthetic fuels are evaluated from a holistic perspective (incl. technological, ecological, economical, social and systemic aspects).

#### Synthetic fuel demands in Germany

Modelling of cost-minimal fuel supply paths as part of the energy system and under consideration of industrial needs.

#### Potentials of the MENA region for fuel production

Analysing in which MENA countries which potentials for the production of synthetic fuels or their intermediate products would be available for export, considering the country's domestic demands.

#### Economy of fuel production in the MENA region

Investigation of international trade relations and (socio-) economic impacts of synthetic fuel production in the MENA region.

### Synthesis

Finally, supply paths and roadmaps from the MENA region to Germany are outlined for the analysed fuels.

## Highlights



- Identification of opportunities and risks for the implementation of selected synthetic fuel paths
- Consideration of interrelations between the transport and industrial sectors in order to identify potential competitors for hydrogen-based products at an early stage
- Anticipatory consideration of possible risks and barriers in the MENA region and the influence of third countries
- Estimation of macroeconomic effects to indicate advantages and disadvantages of individual roadmaps for Germany and the MENA region
- Application of the theoretical analysis to three country case studies to verify the results by a detailed analysis of the local framework conditions

### Expert Advisory Boards

The research project will be accompanied by two expert advisory boards consisting on the one hand of interested **industry representatives from Germany** and on the other hand of **relevant actors from the MENA region**. The advisory boards are convened once a year and serve the purpose of validating the research findings.

