SOLACTIVE
German Index Engineering

SUSTAINABLE FUELS INDEX

Investing in the decarbonization of transportation

Based on data from the International Energy Agency, in 2021, CO2 emissions from the transportation sector increased by 8% relative to 2020. Transportation accounts for 24% of global energy-related emissions, a figure that is expected to grow in the following years if no action is taken to prevent this development. To this extent, the decarbonization of transportation is crucial to **achieve net-zero targets**.

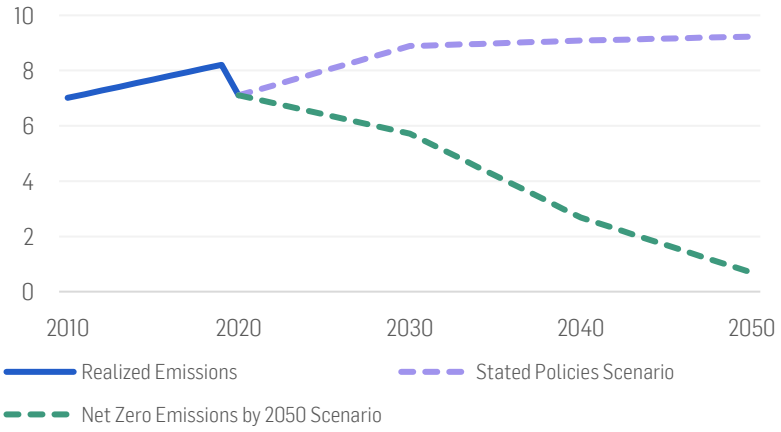
Investment Idea

Currently, electrification is one of the key technologies to achieve carbon neutral mobility – with rising EV sales around the world, expanding charging infrastructure networks and increasingly stringent regulatory frameworks favoring EV adoption.

However, widespread electrification is not likely to happen in the foreseeable future for the aviation and marine transport industries, since replacing current engines with electric ones is particularly challenging for airplanes and ships.

Thus, there is a need for alternative solutions to decarbonize these industries: hence the need for sustainable fuels.

Global transportation sector CO2 emissions under stated policy and net-zero scenarios (billion tons)



Source: International Energy Agency

How are e-fuels produced?[1]

E-fuel production is based on the extraction of hydrogen. This happens by means of an electrolysis process that breaks down water (e.g., seawater from desalination plants) into its components of hydrogen and oxygen. For this process and further production steps, electricity is required.

In a second process step, the hydrogen is combined with CO2 extracted from the air and converted into a liquid energy carrier: The e-fuel.

1) Adapted from: What are eFuels? - eFuel Alliance (efuel-alliance.eu)

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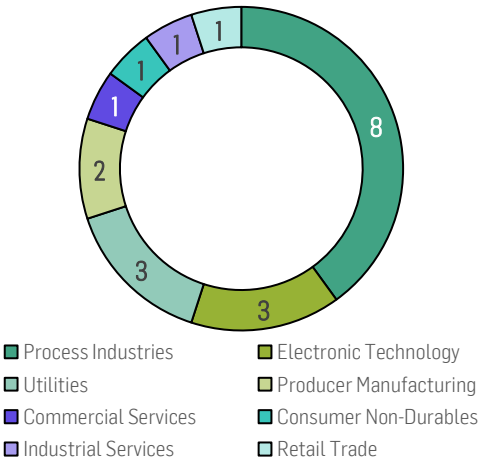
Index Description:

The Solactive Sustainable Fuels Index concept offers exposure to companies producing and commercializing carbon neutral fuels, as well as those manufacturing the required technology for sustainable fuel production and usage.

Sustainable fuels are produced from green sources of energy and can be used to power internal combustion and fuel cell engines, with the major advantage that they are **carbon neutral**. This term encompasses different types of fuels, such as green hydrogen, biofuels (made of biomass) or electrofuels (also known as e-fuels or synthetic fuels).

Number of Sustainable Fuels Index constituents by sector



Source: Solactive

Companies in the sustainable fuels industry

gevo
PLUG POWER
Bloomenergy
Verbio Biofuel and Technology
ADM
MONTAUK RENEWABLES

These fuels are expected to play an increasingly important role in the decarbonization of critical transportation sectors. For instance, sustainable aviation fuel, a type of biofuel, can be mixed with kerosene and, subsequently, be used as jet fuel. Regarding marine shipping, both e-ammonia and e-methanol are the most promising green substitutes of traditional fuels.

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