

Global Energy Solutions

For Prosperity and Climate Neutrality

Feasible solutions for both energy and climate.

Technically possible, economically viable, globally implementable. Earth's gradual transition from a fossil-based to a climate-neutral energy system is realistically possible in the timeframe 2050 to 2070. By then, we can expect ten billion people living on our planet. They should be able to live in freedom and prosperity as well as in peace with nature. Our vision is an abundance of climate-neutral energy for all.

Innovation and investment are central.

Creativity and willingness to change are required. Based on new ideas and approaches we see promising and affordable technology paths on a global scale and analyse them without prejudice. Investors will find that our solutions are scientifically robust and commercially viable for forward-looking business opportunities.

Building blocks of a climate-neutral energy system.

Low-cost production of green electricity is key. For example, the earth's deserts have plentiful sun, and can thus produce green electricity in ever greater quantities. While this supports local development, excess is converted to green hydrogen (H₂) by electrolysis, with a wide range of potential uses. Hydrogen and carbon dioxide (CO₂) captured from industrial processes (CCU) are used to produce climate-neutral energy carriers, in particular methanol ("liquid electricity") and methane ("gaseous electricity"). These are guiding principles for the global transition from fossil-based processes towards the use of climate-neutral energy carriers.

Climate-neutral energy carriers will increasingly replace fossil resources.

In the production of climate-neutral energy carriers, solar energy is converted into chemically-bound energy. In nature, this process is called photosynthesis. In contrast, "technical photosynthesis" turns CO₂ into a commercially valuable commodity in a circular carbon economy. Further processing steps allow the production of climate-neutral synthetic fuels, such as gasoline, kerosene or methanol-based heating oil. So today's vehicles, aircrafts and infrastructure can continue to be used. Thus, climate-neutrality is achieved more rapidly and without replacing the existing stock of machinery.

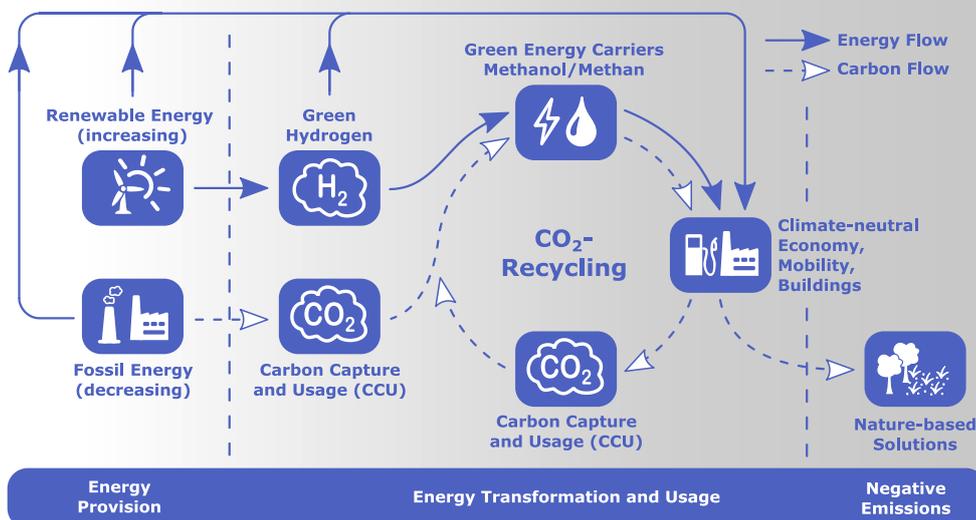
Technical and natural cycles complement each other.

CO₂ emissions from the combustion of climate-neutral energy carriers are recycled by feeding them into the technical carbon cycle. If this is not practicable, nature's carbon cycle serves as a substitute. Through reforestation, rainforest protection and humus formation, e.g. in agriculture, CO₂ emissions are removed naturally from the atmosphere (nature-based solutions), financed by the purchase of high-quality climate certificates by the CO₂ emitters.

International cooperation as the foundation.

What is needed is cooperation on equal terms between industrialised, emerging and developing countries. Europe is primarily counting on Africa. Millions of new jobs can be created there in the green energy sector, in industry, as well as in agriculture and forestry. The resulting economic momentum leads to development and slowing of population growth. Finally, this is fully in line with the United Nations' 2030 Agenda for Sustainable Development.

Elements of a climate-neutral System



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