The value chain of the future

Storage

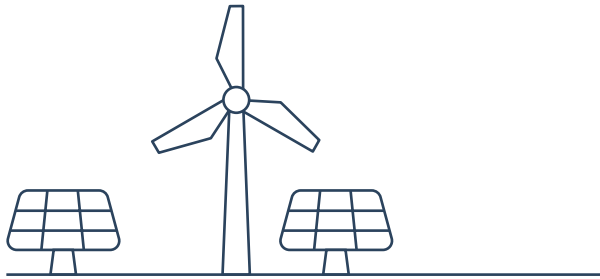
As Austria's biggest gas storage company – making it the country's largest energy storage operator and one of the leading storage operators in Europe – RAG's natural pore reservoirs put it in a position to provide high-volume, flexible and seasonal storage of conventional natural gas, green gas, biogas and, in the future, larger quantities of hydrogen. These energy sources are ready to be called on in large volumes precisely when and where they are needed, enabling us to underpin security of supply for Austria and Europe.

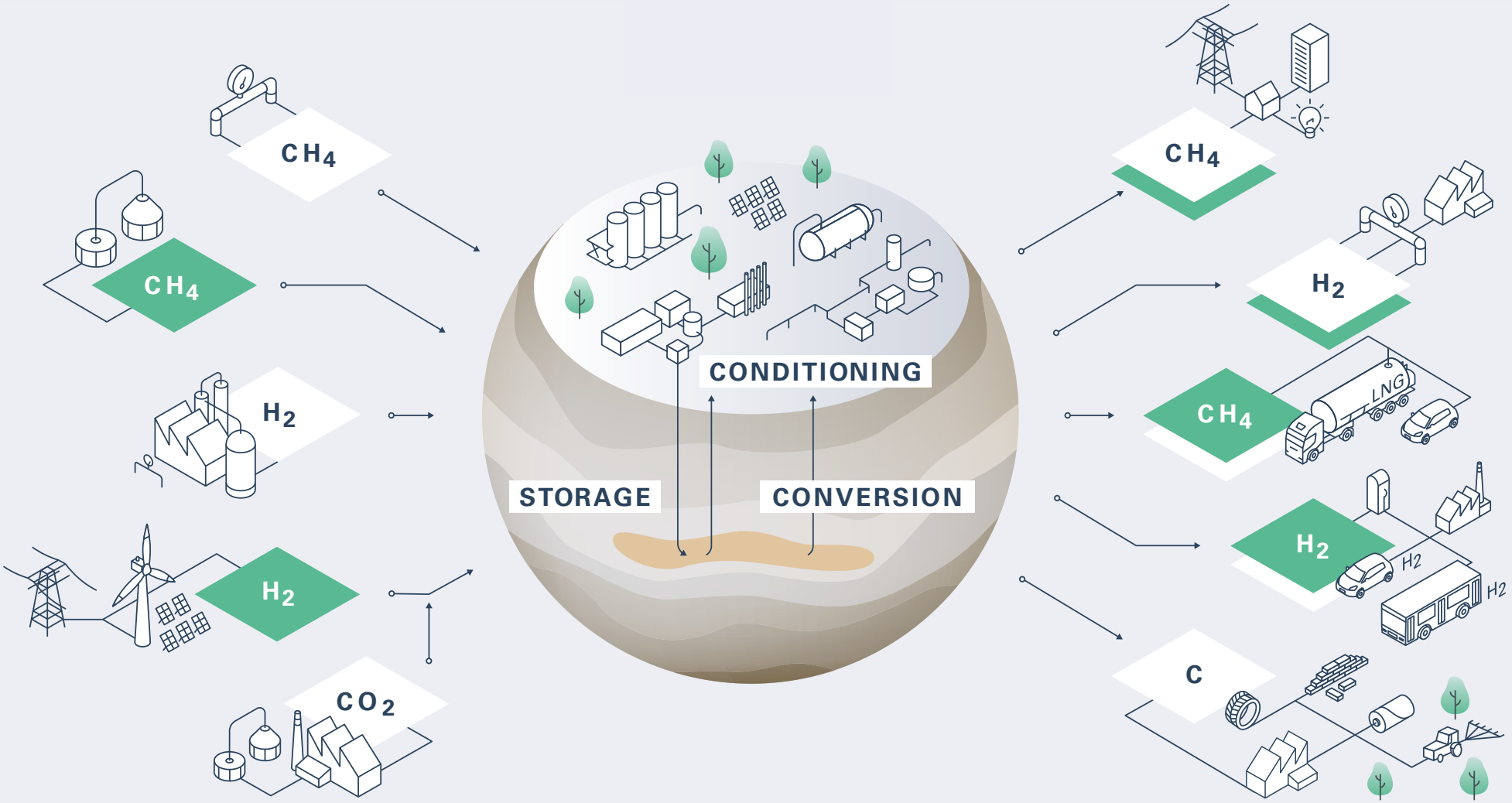
Conversion

Renewable solar and wind power is converted into hydrogen (H_2) by means of carbon-neutral electrolysis. This makes it possible to store a portion of the summer energy harvest as gas in our pore reservoirs for use in winter, or to combine the hydrogen with carbon dioxide (CO_2) produced from biomass or industrial operations and convert it into synthetic natural gas, in depleted underground gas reservoirs, by means of a natural microbiological process. This creates a sustainable carbon cycle, and the naturally produced green gas is carbon-neutral.

Conditioning

Stored energy can be withdrawn and used at any time as required. This green energy can then be delivered via existing pipeline networks for power generation at gas-fired power stations, heat generation at local cogeneration stations, as well as for district heating, gas heating systems or eco-friendly transportation running on LNG. What's more, in the future methane splitting will produce carbon that can be used as a valuable basic material for batteries, insulation materials, tyres, construction materials and steel, or in agriculture as a soil conditioner. The process also produces carbon-neutral, climate-friendly hydrogen for use as fuel, as well as in energy generation or industrial processes.





Gaseous Energy Sources:

CH_4	Natural Gas
CH_4	Biogas / Bio-Methane
H_2	Hydrogen from pyrolysis
H_2	Hydrogen from electrolysis
CO_2	Carbon Dioxide from biomass or industrial process

Applications:

CH_4	CH_4	Use for electricity and heat
H_2	H_2	Hydrogen in transport network and industry
CH_4		Green Gas for mobility
H_2	H_2	Hydrogen for industry, mobility and heat
C		Carbon from pyrolysis