Climate Action Network (CAN) Europe is Europe's leading NGO coalition fighting dangerous climate change. With over 170 member organisations from 38 European countries, representing over 1.500 NGOs and more than 47 million citizens, CAN Europe promotes sustainable climate, energy and development policies throughout Europe.

EU Hydrogen Strategy

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Under certain conditions, renewable hydrogen can be considered as Paris compatible non-fossil gas.

Sectors where reducing emissions is most difficult such as the steel and chemicals or aviation, long distance shipping and heavy duty road transport could partly rely on renewable hydrogen or derived energy carriers such as liquid synthetic fuels or synthetic methane sourced from renewable electricity.

Renewable hydrogen (also called green hydrogen) produced through ***electrolysis with renewable electricity*** delivers climate benefits when compared to other gases. Hydrogen production linked to nuclear power is not supported. Hydrogen originating from fossil gas through steam methane reforming (also called blue hydrogen or grey hydrogen depending on the use of CCS) is certainly not renewable or green, is not sustainable and can by its nature not be compatible with a net zero greenhouse gas emissions economy.

Hydrogen production by electrolysis is currently costly. To ***assess infrastructure needs***, the European network planning process needs to look into a number of questions such as availability, point of production

and point of consumption to guide decisions about a refit of the current gas network and/or investing in a new hydrogen infrastructure network.

Synthetic methane and synthetic liquid fuels are produced by conversion of renewable hydrogen and addition of CO2. This CO2 should definitely not come from a fossil source. Synthetic methane has the same characteristics as methane from natural gas and is a potent greenhouse gas when emitted into the atmosphere. The process to create synthetic methane is very energy intensive thus its efficiency levels are quite low. The energy used for the process to make synthetic methane must not be in competition with more efficient ways of energy generation.

The ***production of renewable hydrogen should not compete*** with the production of renewable electricity that could be directly used to decarbonise key sectors such as heating and transport. Renewable hydrogen must therefore in any case use ***100% additional renewable electricity***. The additionality can be achieved in two ways: it can be surplus electricity (which would otherwise be curtailed due to grid congestion) or be produced through additional renewable generation capacities that cover the electricity demand for renewable hydrogen on top of the direct electricity demand in industry, buildings and transport.

Dedicated support schemes should incentivise additional renewable generation capacities to feed electrolysers that cover the demand for renewable hydrogen. General quota targets for different gaseous energy carriers would not target the necessary market introduction of renewable hydrogen.

Around 70 Mt of dedicated hydrogen is produced today at global scale: 76% from fossil gas and almost all the rest (23 %) from coal. As a consequence, global hydrogen production today is responsible for 830 MtCO2/yr, corresponding to the annual CO2 emissions of Indonesia and the United Kingdom combined.