

Title (en)

SYSTEM AND PROCESS FOR PRODUCING SYNTHETIC FUELS WITHOUT EMITTING CARBON DIOXIDE

Title (de)

ANLAGE UND VERFAHREN ZUR HERSTELLUNG VON SYNTHETISCHEN KRAFTSTOFFEN OHNE KOHLENDIOXIDEMISSION

Title (fr)

SYSTÈME ET PROCÉDÉ DE PRODUCTION DE COMBUSTIBLES SYNTHÉTIQUES SANS ÉMISSION DE DIOXYDE DE CARBONE

Publication

EP 4298187 A1 20240103 (DE)

Application

EP 22723100 A 20220414

Priority

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- EP 2022060101 W 20220414

Abstract (en)

[origin: CA3216339A1] A plant for the production of synthetic fuels, in particular jet fuel (kerosene), crude petrol and/or diesel, includes: a) a synthesis gas production unit for the production of a raw synthesis gas from methane, water and carbon dioxide, the synthesis gas production unit having at least one reaction section in which methane, water and carbon dioxide react to form the raw synthesis gas, and at least one heat generation section in which the heat necessary for the reaction of methane and carbon dioxide to produce the raw synthesis gas is generated by burning fuel to form flue gas, b) a separation unit for separating carbon dioxide from the raw synthesis gas produced in the synthesis gas production unit, c) a Fischer-Tropsch unit for the production of hydrocarbons by a Fischer-Tropsch process from the synthesis gas from which carbon dioxide has been separated in the separation unit, and d) a refining unit for refining the hydrocarbons produced in the Fischer-Tropsch unit into synthetic fuels, the plant further comprising e 1) a separation unit for separating carbon dioxide from the flue gas discharged from the synthesis gas production unit via the flue gas discharge line and/or e 2) a flue gas return line which is connected to the heat generation section of the synthesis gas production unit, wherein i) the carbon dioxide separated from flue gas or the flue gas itself via the flue gas return line and ii) the carbon dioxide separated from the raw synthesis gas are either fed directly to the synthesis gas production unit or first fed to a carbon dioxide compression unit and from there fed to the synthesis gas production unit, with the unit also having an electrolysis unit for separating water into hydrogen and oxygen, wherein the electrolysis unit has a water feed line, an oxygen discharge line and a hydrogen discharge line, and wherein from the oxygen discharge line a line leads into the oxygen-containing gas feed line to the synthesis gas production unit.

IPC 8 full level

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