

Title (en)

POWER STATION-BASED METHANATION SYSTEM

Title (de)

KRAFTWERK BASIERTES METHANISIERUNGSSYSTEM

Title (fr)

SYSTÈME DE MÉTHANISATION BASÉ SUR UNE CENTRALE ÉLECTRIQUE

Publication

EP 2823088 A1 20150114 (DE)

Application

EP 13714880 A 20130322

Priority

- EP 12163588 A 20120410
- EP 2013056065 W 20130322
- EP 13714880 A 20130322

Abstract (en)

[origin: EP2650401A1] Power station-based methanation system (1) comprises a fossil fuel-fired power station (2) with an electrolysis unit (3), and a methanation reactor (4). The power station and the electrolysis unit are designed to supply the methanation reactor with starting materials for a methanation reaction, and the electrolysis unit is operated in a charging state and a discharging state, where an electric power is supplied to the electrolysis unit and a chemical energy store is charged at the same time, during the charging state and the chemical energy store is discharged during the discharging state. An independent claim is also included for operating the methanation system, comprising either: supplying water to the electrolysis unit, electrolytically or chemically converting the water into hydrogen, mixing hydrogen with the carbon dioxide obtained from power station, and supplying the mixture of hydrogen and carbon dioxide as starting materials to the methanation reactor; or supplying a mixture of water and carbon dioxide obtained from the power plant, electrolytically or chemically converting mixture of water and carbon dioxide into hydrogen and carbon monoxide, and supplying the mixture of hydrogen with carbon monoxide as starting materials to the methanation reactor.

IPC 8 full level

C25B 1/04 (2006.01); **C01B 3/00** (2006.01); **C01B 3/08** (2006.01); **C07C 1/12** (2006.01); **C10L 3/08** (2006.01)

CPC (source: EP US)

B01J 7/00 (2013.01 - US); **C01B 3/061** (2013.01 - EP); **C01B 3/105** (2013.01 - EP); **C07C 1/0485** (2013.01 - US); **C07C 1/12** (2013.01 - US); **C10L 3/08** (2013.01 - EP US); **C25B 1/04** (2013.01 - EP US); **C25B 5/00** (2013.01 - EP US); **C10L 2290/02** (2013.01 - EP US); **C10L 2290/06** (2013.01 - EP US); **C10L 2290/12** (2013.01 - EP US); **C10L 2290/38** (2013.01 - EP US); **C10L 2290/58** (2013.01 - EP US); **Y02E 60/32** (2013.01 - EP US); **Y02E 60/36** (2013.01 - EP US)

Citation (search report)

See references of WO 2013152942A1

Citation (examination)

US 5492777 A 19960220 - ISENBERG ARNOLD O [US], et al

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 2650401 A1 20131016; EP 2823088 A1 20150114; US 2015080483 A1 20150319; WO 2013152942 A1 20131017

DOCDB simple family (application)

EP 12163588 A 20120410; EP 13714880 A 20130322; EP 2013056065 W 20130322; US 201314390990 A 20130322