

Title (en)

PROCESS FOR PRODUCING LIQUEFIED HYDROGEN

Title (de)

VERFAHREN ZUR HERSTELLUNG VON VERFLÜSSIGTEM WASSERSTOFF

Title (fr)

PROCÉDÉ DE PRODUCTION D'HYDROGÈNE LIQUÉFIÉ

Publication

**EP 4115130 A2 20230111 (EN)**

Application

**EP 21811420 A 20211013**

Priority

- GB 202018333 A 20201121
- GB 2021000117 W 20211013

Abstract (en)

[origin: WO2022106801A2] A process for liquefying hydrogen gas comprising: cooling the hydrogen gas to an intermediate temperature by heat exchange with a refrigerant circulating in a refrigeration loop provided with a higher temperature expander and a lower temperature expander, the outlet stream from the lower temperature expander containing some condensed refrigerant; a means is provided of separating the condensate from the circulating refrigerant; further cooling the hydrogen gas by heat exchange with evaporation and reheating of the said condensate. The fluid in the said refrigeration loop is typically methane (such as natural gas after removal of carbon dioxide, water vapour and other impurities), or nitrogen, or a mixture thereof.

IPC 8 full level

**F25J 1/00** (2006.01)

CPC (source: EP GB KR US)

**F25J 1/001** (2013.01 - EP GB KR US); **F25J 1/0037** (2013.01 - EP KR US); **F25J 1/005** (2013.01 - EP KR US); **F25J 1/0052** (2013.01 - EP KR); **F25J 1/0062** (2013.01 - EP KR); **F25J 1/0065** (2013.01 - EP KR US); **F25J 1/0067** (2013.01 - EP KR US); **F25J 1/0072** (2013.01 - EP GB KR US); **F25J 1/008** (2013.01 - GB KR); **F25J 1/0082** (2013.01 - EP KR US); **F25J 1/0092** (2013.01 - EP KR US); **F25J 1/02** (2013.01 - GB); **F25J 1/0208** (2013.01 - EP KR); **F25J 1/0209** (2013.01 - EP KR US); **F25J 1/0219** (2013.01 - EP KR US); **F25J 1/0292** (2013.01 - EP KR US); **F25J 2210/04** (2013.01 - US); **F25J 2210/06** (2013.01 - GB US); **F25J 2215/04** (2013.01 - GB US); **F25J 2215/10** (2013.01 - GB US); **F25J 2270/06** (2013.01 - EP KR US); **F25J 2270/16** (2013.01 - EP KR US); **F25J 2270/20** (2013.01 - GB US)

Citation (search report)

See references of WO 2022106801A2

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

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

**WO 2022106801 A2 20220527**; **WO 2022106801 A3 20220804**; **WO 2022106801 A9 20220909**; AU 2021382399 A1 20230518; CN 116507870 A 20230728; EP 4115130 A2 20230111; GB 202018333 D0 20210106; GB 2601173 A 20220525; GB 2601173 B 20221116; JP 2024501105 A 20240111; KR 20230074241 A 20230526; US 2023332833 A1 20231019

DOCDB simple family (application)

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