

Title (en)

METHOD AND SYSTEM FOR EXTRACTING METHANE GAS, CONVERTING THE GAS TO CLATHRATES, AND TRANSPORTING THE GAS FOR USE

Title (de)

VERFAHREN UND SYSTEM ZUR EXTRAKTION VON METHANGAS, UMWANDLUNG DES GASES IN CLATHRATE UND TRANSPORT DES GASES ZUR VERWENDUNG

Title (fr)

PROCÉDÉ ET SYSTÈME D'EXTRACTION DE GAZ MÉTHANE, DE CONVERSION DU GAZ EN CLATHRATES ET DE TRANSPORT DU GAZ POUR UTILISATION

Publication

EP 4139268 A1 20230301 (EN)

Application

EP 21791990 A 20210419

Priority

- US 202063013772 P 20200422
- US 202017020301 A 20200914
- US 2021027902 W 20210419

Abstract (en)

[origin: WO2021216413A1] Methods and systems for extracting natural gas are described herein. The source of the natural gas may be a reservoir of natural gas or natural gas and crude oil found on land or in a subterranean or subsea environment. The natural gas also may be that extracted from a subsea reservoir of naturally formed clathrate hydrate. The methods may be performed on land, at the sea surface or at the seafloor. The methods feature providing a suitable promoter to facilitate selective formation of a structure II (sII) methane clathrate hydrate to thereby store natural gas in a readily transportable form. The methods may also feature separating both natural gas and associated water involved in producing it from impurities.

IPC 8 full level

C07C 27/00 (2006.01); **B01J 12/00** (2006.01)

CPC (source: EP IL KR)

C07C 7/00 (2013.01 - EP IL); **C07C 7/10** (2013.01 - KR); **C07C 9/04** (2013.01 - IL KR); **C10G 31/06** (2013.01 - EP IL KR);
C10L 3/101 (2013.01 - EP); **C10L 3/104** (2013.01 - EP); **C10L 3/108** (2013.01 - EP); **C10L 3/12** (2013.01 - EP); **E21B 41/0099** (2020.05 - EP);
E21B 43/34 (2013.01 - EP); **C10L 2290/06** (2013.01 - EP); **C10L 2290/30** (2013.01 - EP)

C-Set (source: EP)

C07C 7/00 + C07C 9/04

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 2021216413 A1 20211028; AU 2021261248 A1 20230105; BR 112022021477 A2 20230124; CA 3176710 A1 20211028;
CN 115867528 A 20230328; EP 4139268 A1 20230301; EP 4139268 A4 20240327; IL 297517 A 20221201; JP 2023523950 A 20230608;
KR 20230074658 A 20230531

DOCDB simple family (application)

US 2021027902 W 20210419; AU 2021261248 A 20210419; BR 112022021477 A 20210419; CA 3176710 A 20210419;
CN 202180030699 A 20210419; EP 21791990 A 20210419; IL 29751722 A 20221022; JP 2022564527 A 20210419;
KR 20227040904 A 20210419