

Title (en)
CRYOGENIC THERMODYNAMIC CYCLE WITH HEAT RECOVERY

Title (de)
KRYOGENER THERMODYNAMISCHER KREISLAUF MIT WÄRMERÜCKGEWINNUNG

Title (fr)
CYCLE THERMODYNAMIQUE CRYOGÉNIQUE AVEC RÉCUPÉRATION DE CHALEUR

Publication
EP 3824164 A1 20210526 (EN)

Application
EP 19773927 A 20190822

Priority
• IT 201800008157 A 20180822
• IB 2019057071 W 20190822

Abstract (en)
[origin: WO2020039380A1] The present invention relates to a process for the regasification of a flow of liquefied natural gas (LNG1), contained in a tank together with a quantity of Boil Off Gas (BOG), and for the production of electricity comprising: a step a) in which a flow of the LNG (LNG1) is subjected to a low-pressure pumping step, thus obtaining a flow LNG2; a step b) in which a portion of said flow (LNG1') is heated in a recondenser, thus obtaining a flow LNG1'' then combined with the flow LNG2; a step c) in which said flow LNG2 is heated in a condenser (COND); a step d) in which said flow LNG2 is subjected to a step of superheating in a superheater (SUR), thus obtaining regasified LNG; a step I) in which a flow (BOG1) of the Boil Off Gas (BOG) contained in the tank is compressed in a first step Ia), thus obtaining a flow of Boil Off Gas (BOGa), and in a second step Ib), thus obtaining a flow of Boil Off Gas (BOGb); a step II) in which said flow of Boil Off Gas (BOGb) is cooled in a step of heat recovery in a recuperator (REG, REC1, REC2); a step III) in which said flow of Boil Off Gas (BOGb) is recondensed in the recondenser of step b); in which the step II) of heat recovery and the step c) of condensation are carried out respectively in a step 1) and 3) of a cycle which employs a flow of an organic fluid (FOA1), which, after step 1) and before step 3), is subjected to a step 2) of expansion in a turbine (TURB) for the production of electricity.

IPC 8 full level
F01K 17/06 (2006.01); **F01K 25/10** (2006.01)

CPC (source: EP)
F01K 17/06 (2013.01); **F01K 25/10** (2013.01)

Citation (search report)
See references of WO 2020039380A1

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)
WO 2020039380 A1 20200227; EP 3824164 A1 20210526; IT 201800008157 A1 20200222

DOCDB simple family (application)
IB 2019057071 W 20190822; EP 19773927 A 20190822; IT 201800008157 A 20180822