

Title (en)

METHOD AND APPARATUS FOR LIQUEFYING NATURAL GAS

Title (de)

VERFAHREN UND VORRICHTUNG ZUR VERFLÜSSIGUNG VON ERDGAS

Title (fr)

PROCEDE ET APPAREIL DE LIQUEFACTION D'UN GAZ NATUREL

Publication

EP 0687353 B1 19981111 (FR)

Application

EP 95905171 A 19941226

Priority

- FR 9401535 W 19941226
- FR 9315924 A 19931230
- FR 9402024 A 19940221

Abstract (en)

[origin: WO9518345A1] The process for liquefying natural gas according to the invention consists in liquefying at least part of said gas by expanding it using mechanical energy, the gas during said expansion passing from a dense phase to a liquid phase without phase transition. The process comprises at least the two following steps: a) the natural gas comprised of a plurality of constituents is cooled at a pressure not below the critical pressure value of methane and at a temperature such that said gas is in a dense phase at the end of said cooling; b) at least part of a fraction of said dense phase obtained from step a) is expanded and liquefied through a device (T3) designed to reduce the gas pressure by an expansion process using mechanical energy, the passage from the dense phase condition towards a liquid phase condition occurring substantially without phase transition.

IPC 1-7

F25J 3/06; F25J 1/02

IPC 8 full level

F25J 1/00 (2006.01); **F25J 1/02** (2006.01); **F25J 3/02** (2006.01); **F25J 3/06** (2006.01)

CPC (source: EP KR US)

F25J 1/0022 (2013.01 - EP US); **F25J 1/0035** (2013.01 - EP US); **F25J 1/0037** (2013.01 - EP US); **F25J 1/004** (2013.01 - EP US);
F25J 1/0042 (2013.01 - EP US); **F25J 1/0052** (2013.01 - EP US); **F25J 1/0202** (2013.01 - EP US); **F25J 1/0219** (2013.01 - EP US);
F25J 1/0254 (2013.01 - EP US); **F25J 1/0264** (2013.01 - EP US); **F25J 1/0282** (2013.01 - EP US); **F25J 1/0283** (2013.01 - EP US);
F25J 1/0288 (2013.01 - EP US); **F25J 3/0209** (2013.01 - EP US); **F25J 3/0233** (2013.01 - EP US); **F25J 3/0257** (2013.01 - EP US);
F25J 3/06 (2013.01 - KR); **F25J 2200/02** (2013.01 - EP US); **F25J 2200/70** (2013.01 - EP US); **F25J 2205/04** (2013.01 - EP US);
F25J 2210/06 (2013.01 - EP US); **F25J 2230/20** (2013.01 - EP US); **F25J 2240/02** (2013.01 - EP US); **F25J 2240/30** (2013.01 - EP US);
F25J 2240/40 (2013.01 - EP US); **F25J 2245/02** (2013.01 - EP US); **F25J 2270/06** (2013.01 - EP US); **F25J 2270/12** (2013.01 - EP US);
F25J 2270/88 (2013.01 - EP US)

Cited by

EP3371535A4

Designated contracting state (EPC)

ES FR GB IT

DOCDB simple family (publication)

WO 9518345 A1 19950706; AU 1388395 A 19950717; AU 684885 B2 19980108; CA 2156249 A1 19950706; CA 2156249 C 20060321;
EP 0687353 A1 19951220; EP 0687353 B1 19981111; ES 2126876 T3 19990401; FR 2714722 A1 19950707; FR 2714722 B1 19971121;
JP 3602130 B2 20041215; JP H08507364 A 19960806; KR 100356093 B1 20030129; KR 960701346 A 19960224; NO 303850 B1 19980907;
NO 953377 D0 19950829; NO 953377 L 19950829; US 5651269 A 19970729

DOCDB simple family (application)

FR 9401535 W 19941226; AU 1388395 A 19941226; CA 2156249 A 19941226; EP 95905171 A 19941226; ES 95905171 T 19941226;
FR 9402024 A 19940221; JP 51781795 A 19941226; KR 19950703632 A 19950828; NO 953377 A 19950829; US 50727795 A 19950830