

Title (en)  
METHOD OF REJECTING NITROGEN FROM A HYDROCARBON STREAM TO PROVIDE A FUEL GAS STREAM AND AN APPARATUS THEREFOR

Title (de)  
VERFAHREN ZUR STICKSTOFFTRENNUNG AUS EINEM KOHLENWASSERSTOFFSTROM ZUR BEREITSTELLUNG EINES BRENNSTOFF-GAS-STROMS UND VORRICHTUNG DAFÜR

Title (fr)  
PROCEDE DE REJET D'AZOTE D'UN FLUX D'HYDROCARBURE POUR PRODUIRE UN FLUX DE GAZ COMBUSTIBLE ET APPAREIL ASSOCIEMETHOD OF REJECTING NITROGEN FROM A HYDROCARBON STREAM TO PROVIDE A FUEL GAS STREAM AND AN APPARATUS THEREFOR

Publication  
**EP 2342517 A2 20110713 (EN)**

Application  
**EP 09744404 A 20091102**

Priority  
• EP 2009064423 W 20091102  
• EP 08168159 A 20081103  
• EP 09744404 A 20091102

Abstract (en)  
[origin: WO2010060735A2] Method of, and apparatus (1) for, rejecting nitrogen from a hydrocarbon stream (10) to provide a fuel gas stream (510). A hydrocarbon stream (10) is at least partially liquefied and subsequently expanded. The expanded hydrocarbon stream (110) is fractionated in a fractionation column (150) to provide an nitrogen-rich hydrocarbon stream (160) and a nitrogen-lean hydrocarbon stream (170). The nitrogen-rich hydrocarbon stream (160) is partially condensed in a condenser (200) by cooling against a refrigerant circulated in a dedicated first refrigerant circuit (800), and phase-separated to provide a nitrogen-rejection stream (260) and a nitrogen-lean reflux stream (270) which is returned to the fractionation column (150). The nitrogen-lean hydrocarbon stream (170) is partially vaporized and phase-separated to provide a vapour stream (360) that is returned to the fractionation column (150) and a liquefied nitrogen-lean hydrocarbon stream (370) that is subjected to sub-cooling. The fuel gas stream (510) is generated from the sub-cooled nitrogen-lean hydrocarbon stream (410).

IPC 8 full level  
**F25J 3/02** (2006.01); **F25J 1/02** (2006.01)

CPC (source: EP US)  
**F25J 1/0022** (2013.01 - EP US); **F25J 1/0037** (2013.01 - EP US); **F25J 1/0042** (2013.01 - EP US); **F25J 1/0045** (2013.01 - EP US); **F25J 1/005** (2013.01 - EP US); **F25J 1/0052** (2013.01 - EP US); **F25J 1/0055** (2013.01 - EP US); **F25J 1/0072** (2013.01 - EP US); **F25J 1/0218** (2013.01 - EP US); **F25J 1/023** (2013.01 - EP US); **F25J 1/0239** (2013.01 - EP US); **F25J 1/0255** (2013.01 - EP US); **F25J 1/0267** (2013.01 - EP US); **F25J 1/0274** (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 2200/02** (2013.01 - EP US); **F25J 2200/04** (2013.01 - EP US); **F25J 2200/40** (2013.01 - EP US); **F25J 2200/50** (2013.01 - EP US); **F25J 2200/70** (2013.01 - EP US); **F25J 2200/74** (2013.01 - EP US); **F25J 2205/02** (2013.01 - EP US); **F25J 2210/06** (2013.01 - EP US); **F25J 2215/04** (2013.01 - EP US); **F25J 2240/30** (2013.01 - EP US); **F25J 2240/40** (2013.01 - EP US); **F25J 2270/14** (2013.01 - EP US); **F25J 2270/42** (2013.01 - EP US)

Citation (search report)  
See references of WO 2010060735A2

Designated contracting state (EPC)  
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 SE SI SK SM TR

Designated extension state (EPC)  
AL BA RS

DOCDB simple family (publication)  
**WO 2010060735 A2 20100603**; **WO 2010060735 A3 20120830**; AU 2009319191 A1 20100603; AU 2009319191 B2 20130502; CA 2741970 A1 20100603; CN 102713479 A 20121003; EP 2342517 A2 20110713; JP 2012514050 A 20120621; US 2011239701 A1 20111006

DOCDB simple family (application)  
**EP 2009064423 W 20091102**; AU 2009319191 A 20091102; CA 2741970 A 20091102; CN 200980142822 A 20091102; EP 09744404 A 20091102; JP 2011533751 A 20091102; US 200913126476 A 20091102