

Title (en)
PROCESS AND APPARATUS FOR THE LIQUEFACTION OF NATURAL GAS

Title (de)
VERFAHREN UND VORRICHTUNG ZUR VERFLÜSSIGUNG VON ERDGAS

Title (fr)
PROCÉDÉ ET APPAREIL DE LIQUÉFACTION DE GAZ NATUREL

Publication
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Application
EP 11717717 A 20110419

Priority
• GB 201007297 A 20100430
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Abstract (en)
[origin: GB2479940A] A process for liquefaction of natural gas comprising the steps of: compressing a fluid refrigerant 550; cooling the compressed refrigerant 500 in heat exchange with a cooling fluid to provide a cooled compressed refrigerant 525; work-expanding at least a first portion of the cooled compressed refrigerant 525 in a first turbo-expander 530 to provide an expanded cooled refrigerant 535; reheating the expanded cooled refrigerant 535 in a liquefaction heat exchange system 505 to provide a reheated refrigerant 550; returning the reheated refrigerant 550 to be recompressed; providing a natural gas feed stream 400; compressing the natural gas feed stream 400; passing the compressed natural gas feed stream 410 directly or indirectly to heat exchange with the expanded cooled refrigerant 535 in the liquefaction heat exchange system 505; and withdrawing a cooled and at least partly condensed natural gas product 450 from the liquefaction heat exchange system 440; wherein the first turbo-expander 530 is used to drive a compressor 405 to compress the natural gas feed stream 400. There may be a second turbo-expander to drive the refrigerant compressor, and the refrigerant may be nitrogen. An apparatus for performing the method is also disclosed.

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US 5768912 A 19980623 - DUBAR CHRISTOPHER ALFRED [AU]

Cited by
EP3637029A4; WO2017013475A1

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