

Title (en)
UPSTREAM-DOWNSTREAM INTEGRATED PROCESS FOR THE UPGRADING OF A HEAVY CRUDE OIL WITH CAPTURE OF CO₂ AND
RELATIVE PLANT FOR THE EMBODIMENT THEREOF

Title (de)
INTEGRIERTES UPSTREAM-DOWNSTREAM-VERFAHREN ZUR AUFWERTUNG EINES SCHWEREN ROHÖLS MIT ABSCHIEDUNG VON CO₂
UND ANLAGE ZUR UMSETZUNG DES VERFAHRENS

Title (fr)
PROCESSUS INTÉGRÉ AVAL-AMONT D'AMÉLIORATION DE PÉTROLE BRUT LOURD AVEC CAPTURE DE CO₂ ; INSTALLATION CONNEXE
POUR LA MISE EN OEUVRE DUDIT PROCESSUS

Publication
EP 2658951 A1 20131106 (EN)

Application
EP 11817421 A 20111229

Priority
• IT MI20102464 A 20101230
• IB 2011056009 W 20111229

Abstract (en)
[origin: WO2012090178A1] The present invention relates to an upstream-downstream integrated process for the upgrading of a heavy crude oil with the capture of CO₂, comprising the following operative steps: a) production of a heavy crude oil from a reservoir; b) distillation of said heavy crude oil, at atmospheric pressure or under vacuum, with the separation of a distilled fraction and a hydrocarbon residue containing asphaltenes; c) solvent deasphalting of said hydrocarbon residue containing asphaltenes with the formation of a precipitate of asphaltenes and a deasphalted oil (DAO); dl) oxy-combustion of said precipitate of asphaltenes in pure oxygen with the formation of a stream of exhausted gases comprising CO₂ and water vapour; d2) as an alternative to said oxy- combustion, gasification of said precipitate of asphaltenes in pure oxygen with the formation of a stream of syngas which is subsequently transformed into a gas stream comprising CO₂ and H₂; e) separation of a substantially pure gaseous stream of CO₂ from said stream of exhausted gases or from said gas stream comprising CO₂ and H₂; f) injection of said gaseous stream of CO₂ into the subsoil in order to recover oil or gas, by displacement, from a reservoir and/or to permanently sequester said gaseous stream of CO₂ in a geological formation. The present invention also relates to a plant for the embodiment of the above integrated process.

IPC 8 full level
C10G 21/00 (2006.01); **C10G 21/14** (2006.01); **E21B 43/16** (2006.01)

CPC (source: EP US)
C10G 21/003 (2013.01 - EP US); **C10G 21/14** (2013.01 - EP US); **E21B 43/164** (2013.01 - EP US); **E21B 43/2408** (2013.01 - EP US);
C10G 2300/1033 (2013.01 - EP US); **C10G 2300/206** (2013.01 - EP US); **C10G 2300/44** (2013.01 - EP US); **Y02P 90/70** (2015.11 - EP US)

Citation (search report)
See references of WO 2012090178A1

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

DOCDB simple family (publication)
WO 2012090178 A1 20120705; CA 2825645 A1 20120705; EP 2658951 A1 20131106; IT MI20102464 A1 20120701;
US 2014076553 A1 20140320

DOCDB simple family (application)
IB 2011056009 W 20111229; CA 2825645 A 20111229; EP 11817421 A 20111229; IT MI20102464 A 20101230; US 201113983474 A 20111229