

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  
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Application  
**EP 11817421 A 20111229**

Priority  
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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.

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