
Oilfield CCUS-CO₂ capture

EOR process requirement (Daqing oilfield)

Background information:

During the meeting with Daqing oilfield, we have encountered with the demand in CO₂ capturing in Daqing oilfield of China Petroleum Group. Under the strict requirement of CO₂ emission reduction, to inject CO₂ underground and replace the chemicals dosing to enhance the oil recovery (EOR) rate. In 2019 the EOR project produced over 100 thousand tons of crude oil in Daqing oilfield, and inject over 1.61 million tons of CO₂ over the years.

This is an example of EOR project in China petroleum Group, and it is a rising industry with huge potential to implement such process with CCUS (Carbon Capture Utilization and Storage) in different oilfield and petrochemical industry.

The following detail is the requirement of a planned CO₂-EOR project in Daqing oilfield, and the source is Desorbed gas from hydrogen sulfide concentration tower belongs to medium concentration carbon dioxide gas source.

1. Construction scale

The scale of phase I unit is 350,000 tons / year of gaseous carbon dioxide, and it can produce about 308,000 tons / year of liquid products.

Annual operation time: 8,000 hours

Operating flexibility: 50 ~ 110%

2 Production plan

2.1 Liquid product plan

The liquid product of the project is industrial liquefied carbon dioxide. The product quality complies with the requirements for qualified products in industrial liquid carbon dioxide (GB/t6052-2011).

2.2 Gas product scheme

The gas product carbon dioxide of the project is specially supplied to the oilfield as oil displacement agent in gas phase. The product quality meets the oilfield quality requirements.

The gas with a pressure of about 1.9MPaG entering the initial station of long-distance carbon dioxide transmission, so the products of this device are sent out at a pressure of 2.4Mpa (g) and a temperature ≤ 40 °C and enter the initial station of long-distance carbon dioxide transmission (the initial station is within 2km from this device).

2.3 Product components

In addition to the main component CO₂, the product carbon dioxide liquid also contains N₂, H₂, CH₄, CO and other components.

The Daqing oilfield of China Petroleum Group is looking for Dutch technology and solution for CCUS-CO₂, which could be used in any part for the whole chain of the CCUS-CO₂ process.

Contact

For interested companies who want to get more detail specs of this project, please contact us:

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