

Bolivia focuses on environmental advantage with natural gas

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On the Pirai River in eastern Bolivia lies Santa Cruz de la Sierra, a city founded in the 16th century and surrounded by national parks. Today, the city is the largest in Bolivia with nearly 35% of the country's gross domestic product produced here. And soon, a new liquefied natural gas plant will be in operation in an effort to implement an environmental conscious shift in energy use.

Shift in energy use

An energy consortium has won a contract in Bolivia for the construction of a liquefied natural gas (LNG) plant, which will serve six of the country's nine regions.

The new LNG plant will be established in the city of Rio Grande and supply 13 towns, or 140,000 homes and more than 5,000 businesses in 25 Bolivian cities on a daily basis.

The ultimate goal of this type of liquefied gas system is to promote a shift in energy use to encourage the widespread use of natural gas, an abundant natural resource, as a substitute for other more polluting energy sources.

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The LNG plant will have the daily capacity to convert 200 metric tonnes of natural gas into liquid. At this stage, it will be transported in tankers to regasification stations where it will be re-gasified and distributed through pipes to homes and businesses.

The first LNG plant in Bolivia

This LNG plant is the first of its kind in Bolivia. It seems that at least the raw materials are available for further initiatives as Bolivia ranks third among top hydrocarbon producers of South America, producing over 20 billion cubic meter of natural gas per year.

600-time reduction in volume

The advantage of LNG is a 600-time reduction in volume, allowing transportation by truck, train or ship to areas not supplied by pipelines. To do so, the CO₂ in the pipeline gas has to be removed, as the concentration has to be low enough to avoid formation of liquids in the later cryogenic steps needed to transform the gas to liquefied natural gas.

LNG reduce CO₂ emissions and reduce harmful SO₂.

Natural gas offers an environmental advantage compared to fossil fuels by reduced CO₂ emissions and less harmful SO₂. Because of this, it is a desired substitute to oil as a fuel source, also in areas where oil is the historically dominant source of energy due to easy transportation.



CO₂ extracted with Union technology

The process in which CO₂ is removed from the LNG is called gas sweetening. Union Engineering has delivered the technology, an Extraction-Based Unit (EBU) based on a combination of amine-solution CO₂ absorption from the sour gas which is delivered as a virtually CO₂-free gas, the so-called sweet gas.



The CO₂ absorption takes place in an absorption tower, where a combination of liquid distribution and random filling materials ensure a big surface to enable the chemical absorption of CO₂.

The CO₂-rich amine solution is regenerated in a stripper tower using heat. The CO₂ emitted from the tower can be collected and liquefied for industrial use. Food grade quality CO₂ is also a possibility.

Cooperating with Union gives access to the world's largest CO₂ knowledge base of technologies, design, engineering, production and service.

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-/BBA