



# BUTTING



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## **Goddess Gaia and her resources:**

Pipework for CO<sub>2</sub> storage

Pipework for CO<sub>2</sub> storage Goddess Gaia and her resources In a distant age, when the earth was still young, a powerful goddess called Gaia ruled. Gaia was the guardian of the innermost secret of the earth – the oil, the living blood of the earth itself. She made sure that her springs deep in the earth were well preserved. One day, however, curious Titans dared to venture into the depths of the earth to discover the secret of the oil. They dug deep into the earth and disturbed the ancient layers that Gaia had so carefully cultivated. When the Titans reached the living blood of the earth, it burst forth like a mighty torrent. Gaia, enraged by this act, punished the Titans by imprisoning the oil in underground reservoirs. The sources of oil should no longer flow freely, but wait patiently for the earth and its inhabitants to utilise them respectfully. And here we are: the world's oil and gas reserves have not dried up even thousands of years later. Today we know that burning them produces a lot of greenhouse gas. If



global warming is to remain within limits, the energy industry must therefore do without fossil fuels. But green energies are not yet sufficient to ensure a global supply.

**Carbon capture and storage** The capture and storage of carbon dioxide – summarised under the abbreviation CCS (carbon capture and storage) – is regarded as a key transition technology on the path to climate neutrality. The technology aims to capture carbon dioxide (CO<sub>2</sub>) during oil and gas exploration and from industrial processes and store it safely in underground geological formations to prevent its release into the atmosphere. Empty oil and gas fields, deep layers of rock and former underground salt domes are utilised for this purpose. During oil and gas exploration, however, CO<sub>2</sub> injection can not only store unwanted carbon dioxide, but also contribute to an increased production volume of the oil-gas mixture. This is because CO<sub>2</sub> acts as a propellant that can maintain the pressure in the reservoir.

**BUTTING products for CO<sub>2</sub> transport** The Brazilian pre-salt deposits in the Atlantic Ocean are rich in oil and deep layers of rock. In the course of its most recent projects, BUTTING has already supplied clad pipes that are used for the purpose of CO<sub>2</sub> injection. These pipes must meet the specific requirements for CO<sub>2</sub> transport, namely high corrosion resistance to carbon dioxide as well as high pressure and temperature resistance. According to market studies, 40.8 million metric tonnes of CO<sub>2</sub> were already able to be safely returned to the ground by 2022 as part of the development of Brazil's oil deposits. It is expected that this amount will have doubled to 80 million metric tons by 2025. Marc Brauße, Business Unit Director Clad pipes: "With our mechanically lined



BuBi® and GluBi® pipes and our metallurgically clad products, we are the recognised market leader in the manufacture of high-quality clad pipes for the transport of corrosive media, particularly in offshore applications. Our team is also strongly positioned in the area of innovation and is able to develop customised solutions according to the latest standards and for new applications. Applications in the field of renewable energies or for CO<sub>2</sub> storage are no exception." Bridging technology Does this mean that underground CO<sub>2</sub> storage is a crucial technology for mitigating climate change? This is where opinions differ. Marc Brauße: "We see CO<sub>2</sub> injection into old oil and gas fields, for example, as a bridging technology during the transformation to a more climate-friendly society that is available thanks to existing technologies and underground storage capacities for the safe storage of carbon dioxide. The industry is very experienced when it comes to highly technologised work under difficult conditions for challenging applications. We at BUTTING then guarantee that our products are manufactured and delivered under sustainable conditions."