

NATURAL GAS STORAGE FACILITIES

Wolfersberg, Inzenham-West, Breitbrunn/Eggstätt

RWE Dea - A SOUND AND SAFE GAS STORAGE OPERATOR SERVING YOUR NEEDS AND REQUIREMENTS

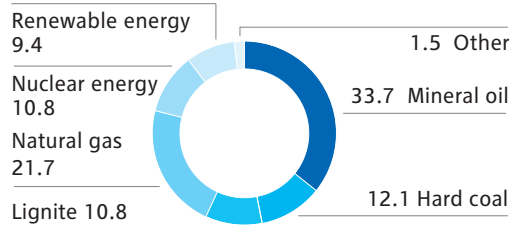
Natural Gas – important cornerstone of energy supply

RWE is one of Europe’s five leading electricity and gas companies. It is active in the generation, trading, transmission and supply of electricity and gas. Within this group RWE Dea is responsible for the exploration and production of crude oil and natural gas and has a proud 110-year company tradition. Through professional know-how in geology and geophysics, highly modern drilling and production techniques RWE Dea is a strong company with activities in Germany and abroad. The key strategic objectives of the company are maintaining the security of energy supply whilst meeting the highest environmental standards. The importance of natural gas in order to cover world-wide demand is increasing continuously. Whereas the percentage of the primary energy consumption in the German market was 15.4 % in 1990, it has grown to 21.7 % in 2010.

Underground gas storage in porous reservoirs

RWE Dea operates three large storage facilities in southern Germany: Wolfersberg, Breitbrunn/Eggstätt and Inzenham-West. Millions of years ago, gas accumulated in the pore spaces and fractures of underground limestone and sandstone beds in southern Bavaria. In the 1960s and 1970s natural gas was produced from these reservoirs by RWE Dea. Underground porous facilities are naturally safe reservoirs that have proven their leak-proof qualities over millions of years. They are particularly suitable for the storage of large volumes of natural gas. So nowadays, natural gas is stored there during low-offtake periods (e.g. in the summer months when consumption levels are lower)

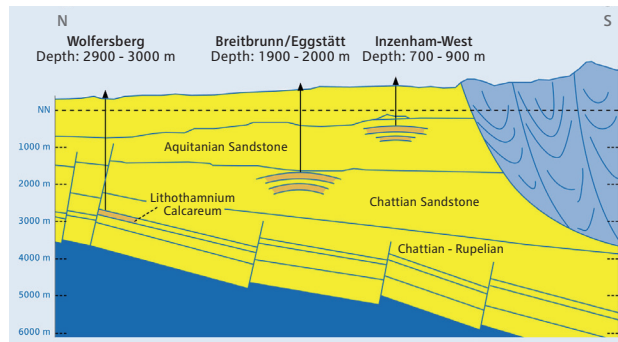
Consumption of primary energy sources in Germany for the year 2010 in per cent



Source: Arbeitsgemeinschaft Energiebilanzen e.V. (Working Group on Energy Balances), current as of: December 2010

Further increase is expected in the coming years. Natural gas is not only an efficient and clean fuel, it is also a flexible backup for unsteady renewable fuels like solar and wind. Therefore natural gas is an important cornerstone for the energy supply in Germany and will support the started transition to a cleaner energy mix.

and supplied to users when demand peaks (e.g. in the winter months when demand for gas is higher). Besides these typical demand schemes also reverse usage is possible for trading purposes.

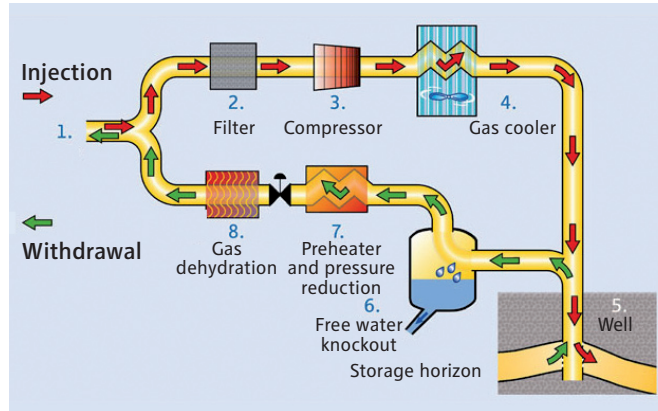




Gas storage cycle

The natural gas storage facilities are connected to the supply grid via an underground pipeline which transports gas to and from the storage facility. Incoming gas is filtered and metered. Then compressor units generate the necessary injection pressure. After the gas cooling process, the gas is pumped through high-pressure pipes into the wells and injected into the storage horizons. There the gas migrates into the porous space of the rocks. The gas is withdrawn from the storage facility the same way it was injected in through. While in storage, the gas absorbs water which has to be separated off when withdrawn in the so-called free water knockout process. After preheating, the pressure is reduced to

supply grid requirements and the gas is dehydrated in a glycol absorption plant. Finally the metering takes place and the gas is returned to the supply grid.



RWE Dea’s storage facilities at a glance

Location	Wolfersberg	Inzenham-West	Breitbrunn/Eggstätt
Start of Operation	1973	1982	1996/2001
Working Gas Volume	365 million m ³	500 million m ³	1,080 million m ³
Injection Rate	140,000 m ³ /h	140,000 m ³ /h	250,000 m ³ /h
Withdrawal Rate	240,000 m ³ /h	300,000 m ³ /h	520,000 m ³ /h
Gas Quality	H gas	H gas	H gas

Storage services

RWE Dea offers flexible storage products consisting of working gas capacity, injection rate and withdrawal rate. The products can be used in order to structure supply or to hedge trading portfolios. Storage capacities can be contracted at short notice and in a flexible manner, in accordance with the customers’ needs. In order to determine the optimal package which suits the customer

portfolio best the RWE Dea sales team is happy to assist and advise.

For more information, product specifications or capacity availability please visit our website or contact our representatives directly.

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