

ShaleGasFinder Carboniferous, Northern Europe

I. General Data Package and Review of Marine Carboniferous Black Shales in North Germany

GEOS4 LITERATURE REVIEW

This ShaleGasFinder compiles relevant properties of black shales which are essential basic parameters to evaluate and explore for shale gas.

The Lower Carboniferous is a well-studied section in the northern German subsurface. This literature review summarizes the huge set of available data on thermal maturity, organic geochemical characteristics and mineralogical composition of marine black shales in northern Germany.

Northern Germany is a mature oil and gas province in terms of conventional oil and gas as well as tight gas exploration and production.

Major source rocks for thermogenic gas are of Lower Carboniferous age and have a high potential for shale gas.

This GEOS4 package provides data from well and outcrop samples including

- Vitrinite reflectance
- TOC contents
- Kerogen types
- Rock Eval analyses
- Mineralogical composition

All data are presented within the context of palaeogeography and tectonic setting.



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GERMANY

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GERMANY'S LARGEST SHALE GAS POTENTIAL

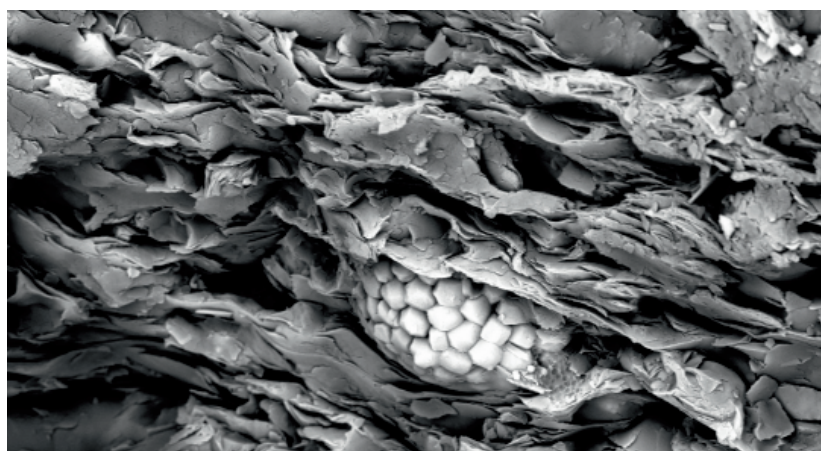
The Lower Carboniferous is considered the stratigraphic section with the highest shale gas potential in Germany.



BGR's evaluation of the German shale gas potential* highlighted the significance of northern Germany as the key region for shale gas exploration.

Lower Carboniferous black shales in this region have a potential of $800 \times 10^9 \text{ m}^3$ of recoverable shale gas which is mainly concentrated on today's marginal areas of the North German Basin.

* Bundesanstalt für Geowissenschaften und Rohstoffe (BGR): Abschätzung des Erdgaspotenzials aus dichten Tongesteinen (Schiefergas) in Deutschland. Report, May 2012.



During the Lower Carboniferous marine black shales were deposited under reducing conditions.

The sediments are often silicified, host sedimentary phosphates and lack carbonates, similar to the Woodford shale. Anoxia is considered to be the result of eutrophication, and upwelling the controlling oceanic factor.