



## **The Shale Gas in Europe project (GASH)**

Hans-Martin Schulz, Brian Horsfield, and the GASH-Team

GeoForschungsZentrum Potsdam, Organic Geochemistry, Potsdam, Germany

At the present time no shale gas play has been brought to the production level in Europe. While the opportunities appear abundant, there are still many challenges to be overcome in Europe such as land access and environmental issues. Costs per well are still higher than in the US, and mining regulations are tighter. As yet it remains unclear whether European shales can support commercial shale gas production. First, it will be essential to test the sub-surface and the potential deliverability of wells, supported by basic research.

GASH is the first major scientific initiative in Europe that is focussed on shale gas; it is ambitious in that it is broad ranging in scientific scope and that it unites leading European research groups and geological surveys with industry. US know-how is also integrated into the programme to avoid reinventing the wheel, or, still worse, the flat tyre. GASH is currently funded by eight companies, and comprises two main elements: compilation of a European Black Shale Database (EBSDB) and focussed research projects that are based on geochemical, geophysical and geomechanical investigations.

The EBSDB is being built by a team of more than 20 geological surveys, extending from Sweden in the north, through western Europe and the Baltic states down to southern Europe, and over to Romania, Hungary and the Czech Republic in the east.

The research projects apply numerical modelling, process simulations and laboratory analyses to selected regional study areas or “natural laboratories” from both Europe and the USA – the goal: to predict gas-in-place and fracability based on process understanding. The European black shales selected as natural shale gas laboratories are the Cambrian Alum Shale from Sweden and Denmark, the Lower Jurassic Posidonia Shale from Central Germany, and Carboniferous black shales from the UK in the west via the Netherlands to Germany in the east. Fresh core material for detailed investigations will be recovered during the mid-2010 drilling of the Alum Shale on Bornholm, a small Danish island in the Baltic Sea. North American black shales which hold successful shale gas plays such as the Barnett and Marcellus Shale are also incorporated in the studies to help calibrate known features and processes.