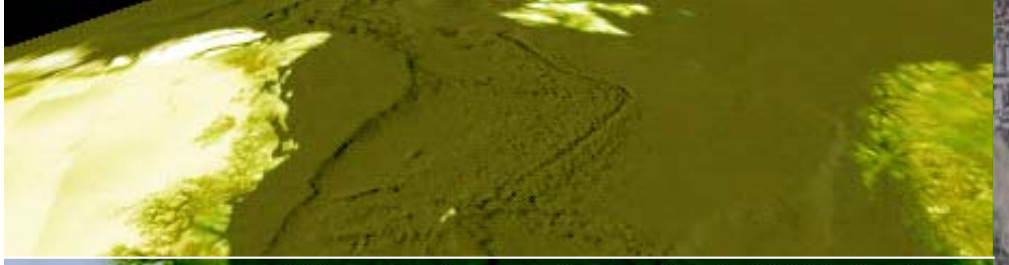

Regional PhaseFinder Packages

GeoS4

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Nowhere is this more pivotal than along the North Atlantic Margin.

GeoS4's exclusive ***PhaseFinder Technology*** accurately predicts charge timing, fluid volume and composition rapidly and inexpensively, based on calibrations from major petroleum provinces worldwide using the PhaseKinetics approach.

In a special initiative, GeoS4 is releasing *Regional PhaseFinder packages* for Norway and Greenland:

Barents Sea - Palaeozoic and Mesozoic sources
Mid-Norway – Permian, Jurassic and Cretaceous sources
Viking Graben - Upper Jurassic source facies
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Greenland - Palaeozoic and Mesozoic sources

Each Regional PhaseFinder package comprises:

- Suite of 8 key source rock samples
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- Approximate 40% saving on regular prices for PhaseKinetics

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Regional PhaseFinder Packages:

Mid-Norway

Haltenbanken can be classified as a mature exploration area, where black oils through gas condensates have been discovered. Multiple sources as well as timing and extent of overpressure are key elements in this province. The Vøring area is the new frontier. Up to now only gas has been discovered in commercial quantities.36

critical elements

of basin evolution include the timing of overpressure generation as well as the occurrence, distribution and characteristics of individual source rock intervals. The burial and heat flow history of Vøring are still the object of debate.

petroleum plays

The Norwegian Petroleum Directorate has defined a total of 8 plays covering Carboniferous to Tertiary intervals. Key source rocks are the Jurassic shales and coals of the Spekk and Åre formations. However, Permian source potential is likely (Ravnefjeld Fm. equivalent) and the importance of secondary sources within the Jurassic such as the Melke and Not formations has been largely neglected. Prospectivity in the Vøring area is largely dependant on the presence of a Cretaceous source rock.

GeoS4

di Primio, R. and B. Horsfield, 2006, From petroleum type organofacies to hydrocarbon phase prediction: AAPG Bulletin, v. 90.

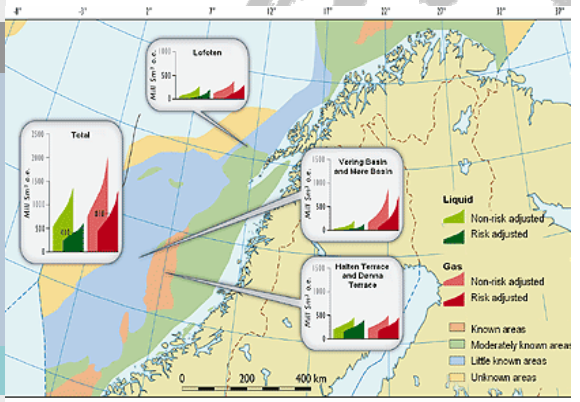
GeoS4´s Mid-Norway **PhaseFinder package** allows the combination of source specific compositional predictions of petroleum, following the *PhaseKinetic approach* (di Primio and Horsfield, 2006), with petroleum system modelling.

The correct reproduction of petroleum phase behaviour represents a major step forward in modelling fluid generation, migration and accumulation in this complex setting.

All source rock samples are immature and represent a regionally significant petroleum source rock type:

Formation	Age	Origin	Depth (m)	OM Type	
Lange	Turonian/Hauterivian	6507/3-3	3000	Type II/III	**Haltenbanken**
Spekk	Ryazanian/Oxfordian	6407/9-8	1610	Type II	
Spekk	Ryazanian/Oxfordian	6608/10-4	2335	Type II	
Spekk	Ryazanian/Oxfordian	6408/10-9	2048	Type II	
Melke	Callovian/Bathonain	6507/12-1	2050	Type II/III	
Not	Bajocian	6507/12-1	2125	Type II/III	
Åre Coal	Rhaetian/Sinemurian	6407/2-2	3020	Type III	
Ravnefjeld Fm	Late Permian	Jameson Land	outcrop	Type II	**Greenland**

Distribution of the undiscovered liquid and gas resources in the Norwegian Sea



http://www.npd.no/

The GeoS4 Mid-Norway package provides:

- Representatives of eight key immature source rocks;
- Kinetic parameters for timing predictions using slow heating rates;
- Petroleum Type Organofacies for predicting bulk petroleum types;
- 2- and 4-component GOR prediction in time and space;
- 14-component physical property/PVT prediction in time and space;
- Kinetic data provided as tables as well as digital files for direct import into PetroMod (IES)

Ask about PhaseKinetics Plus for carbon isotopic compositions of gases

Peter-Huchel-Chaussee 88 | 14552 Michendorf | Germany
info@geos4.com | www.geos4.com