

**Fifth EBN-TNO one-day workshop on  
“Using seismic amplitudes for high-grading prospects and  
reservoir characterisation” – “Direct hydrocarbon indicator”  
examples from deep and sub salt reservoirs in the Netherlands”  
Organised by EBN and TNO Geo-Energy  
Thursday 14 January 2010, Utrecht**

<p>Date : Thursday January 14<sup>th</sup> 2010 Time : 9.30 – 18.00 Venue : Auditorium of TNO-B&amp;O, Princetonlaan 6, Utrecht (route map on <a href="http://www.tno.nl">www.tno.nl</a>) Deadline for pre-registration: Dec 1<sup>st</sup> 2009 Pre-registration costs : Euro 50 On-site registration: Euro 100</p>	<p>Included : Proceedings, lunch and drinks Registration : TNO Business Unit Geo-Energy by tel : 030 256 4511 by fax : 030 256 4605 (or e-mail : <a href="mailto:Organisatie-BenO-SecretariaatGEnGl@tno.nl">mailto:Organisatie-BenO-SecretariaatGEnGl@tno.nl</a>)  <u>Payment details:</u> ING account nr # 68 94 93 061 on behalf of TNO Bouw en Ondergrond, Delft with reference to: "034.21853 - EBN Symposium Amplitudes"</p>
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### **Background**

In the exploration of the Dutch subsurface amplitude studies have been in use for over 30 years. However, even with the help of sophisticated 3D acquisition and imaging techniques, until recently amplitude information failed to significantly improve success rates in exploration wells. During this 30-year time span amplitude techniques often turned out to be unsuccessful in delineating hydrocarbon traps or in de-risking prospects. The use of amplitude information for deeper formations particularly the sub-salt Rotliegend, proved extremely difficult. During the last few years we have witnessed the development of new seismic processing techniques that have significantly improved the quality and value of amplitude information. In 2008 at the EAGE, Bruhl *et al.* presented a paper on DHI enhancement. In this study they illustrate that more consistent results can be obtained by the use of stacking technology.

Are these methods the way forward? Can we now expect a string of exploration successes comparable to introduction of 3D seismic during the early nineties? Our 30-year experience has taught us several explanations why amplitudes give poor results in certain areas and formations. If we want to harvest the benefits of new processing techniques, one of the key questions is whether we need new acquisition or that we can reuse old 3D surveys. This symposium aims to fill these and a number of other gaps in our knowledge. The workshop will touch on the theoretical background but will also highlight a number of detailed examples of amplitude responses in the Netherlands.

### **Workshop format and content**

During the fifth E&P workshop organized by EBN and TNO we want to share some insights into the latest views on gas field delineation and prospect de-risking using amplitudes with contributions of a number of operators in the country. The new insights are not only important during exploration, but are also important during field development.

You will hear state of the art opinions on amplitude enhancement. Operators active in the Netherlands will highlight some of these techniques by presenting case studies. Examples of questions we hope will be answered are:

- What realistically may be expected from the latest techniques.
- Under which geological conditions new techniques can be applied.

### **Primary target group**

Geologists and geophysicists involved in the exploration and exploitation in the deeper subsurface of the Netherlands