

S. 47F

Sent: Monday, 14 April 2008 7:45 PM

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Subject: AW: oil paper [SEC=UNCLASSIFIED]**Attachments:** S. 47F

Dear S. 47F

Excuse me that I only today succeed to review your paper, but last weeks were very busy. You have really done a huge work and compiled a lot of data.

Here some remarks.

It is a common approach to use discovery history for prediction of production. But there are some uncertainties connected with specific conditions, which are not every time ideally.

According to cumulative discoveries I compared in the attached tables (in Gb and Gt) your figures with our figures from our last report

(http://www.bgr.bund.de/cln_006/nn_335074/EN/Themen/Energie/Produkte/energiestudie_kurzf_2006_en.

From our study I used initial reserves for conventional oil (sum of cum. production and reserves) and cum. production and the estimated ultimate recovery (EUR) worldwide.

Your estimate of smoothed cumulative discoveries is in my opinion to conservative. So prediction of cumulative discoveries from cumulative production growth curve includes only fields in production or depleted and cannot give estimates for discovered undeveloped fields and fields to be discovered in the future (resources). Additional there are uncertainties in reserve estimates reflected in different figures by different sources.

In your report as a rule figures for smoothed cumulative discoveries are higher than that for cumulative discoveries. Only for some countries (Venezuela, Norway, Saudi Arabia, Iran and other Gulf – marked yellow in the tables) the figure is lower. What are the reasons for this?

By comparison of the figures of your and our report for most regions differences are small. There are greater differences for Venezuela and Middle East. For Venezuela it may be caused by difficulties to differ between conventional and unconventional oil. In the Middle East your figures are lower. This may be caused by using figures of S. 47F who discounted the reserves. There are different positions. If the reserves here are shortened so the resources figures must be increased due to early stage of exploration in this countries.

In general I think that the oil potential is higher than your estimate.

According the development of oil production I agree with you, that peak production will be reached around 2020 which corresponds with our position. However there are several uncertainties associated with

- Figure of estimated ultimate recovery which varies widely
- Development of future demand on oil
- Future developments in petroleum technology, which can possibly increase recovery factor and following the figure of recoverable oil
- Political and economic conditions in the main oil-producing countries

In the future the oil supply will increasingly depend on Middle East Gulf OPEC countries.

Please note that the numbers in the tables are in German version that is in opposite to English. In the German version the comma corresponds to the dot in English version and opposite.

Best regards

S. 47F

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