

## Peak oil The view from Saudi Arabia

# *‘Oil is too important to be subjected to be superficial analysis’*

| By Karel Beckman

At the World Energy Congress in Rome, Abdallah S. Jum’ah, President and ceo of Saudi Aramco, the world’s largest oil producer, presented his views on global oil resources. ‘The world does not have to worry about “peak oil” for a long time’, Jum’ah argued.



Abdallah Jum’ah Photo: Manuela Susi

The Aramco-chief did not have much to say on the climate issue. Biofuels present ‘huge uncertainties’ and ‘alternative energy sources’ will have a ‘limited significance’ for the global energy supply mix, Jum’ah said. According to the Saudi executive, improved energy efficiency and ‘new fuel formulations’ are the best ways of reducing emissions.

But most of his speech was devoted to the subject of peak oil. Peak oil theorists like investor Matthew Simmons have argued that the oil reserves of Saudi Arabia in particular are much smaller than the country lets on. Jum’ah did not deal directly with this issue, but he roundly rejected any notion of oil reserves peaking in the foreseeable future.

‘We live in a time when global energy issues have reached unprecedented levels of significance both for nations and the consuming public’, Jum’ah said. ‘However, concerns over energy security are nothing new. Back in 1972, an interdisciplinary research group known as the Club of Rome issued *The Limits to Growth*, a landmark study which predicted the rapid depletion of natural resources leading to worldwide socioeconomic chaos. Fortunately, the dates predicted for the exhaustion of these various resources have come and gone without the dire consequences of societal collapse and economic misery envisioned in the report.’

Jum’ah then went on to take ‘a hard look’, as he put it, ‘at the earth’s total endowment of liquid fuels’. He started with looking at ‘liquid energy resources in place’, which represent ‘the

basic petroleum building blocks we have to work with’. According to Jum’ah, the amount of conventional oil-in-place is ‘somewhere between six and eight trillion barrels’. The volume of non-conventional oil-in-place (i.e. condensates, natural gas liquids, tar sands, bitumen, extra heavy oil, oil shales, gas-to-liquids and coal-to-liquids) is ‘rather murkier’, some seven trillion barrels to eight trillion barrels. Taking conventional and non-conventional resources together, total in-place liquids range between 13 trillion and 16 trillion barrels. ‘To put those figures in perspective, to date we have consumed only 1.1 trillion barrels of oil, or seven to nine percent of resources in place. Nearly all of that was conventional oil.’

Jum’ah pointedly noted that ‘the vast non-conventional resources’ are located ‘primarily in the Western Hemisphere - think of Canada’s tar sands, extra heavy oil in Venezuela’s Orinoco Belt and the oil shales of the Rockies’ in the US. ‘That means’, he said, that ‘regions beyond what is usually thought of as the “oil patch” have a huge stake in the future of petroleum, and in harnessing both conventional and non-conventional resources.’ The Aramco man seemed to be warning the western world not to rely too much on oil alternatives, not for the sake of the Saudis, but for their own sake. ‘Development of non-conventional oil will only happen if the world’s energy enterprises and institutions pursue R&D initiatives focusing on the more effective recovery of oil in all its forms, and work to create new technologies which enable oil to be

used in a more environmentally sensitive and economically efficient manner', he said. 'Conversely, if attention is focused on other options, at the expense of oil, I fear we will not have the tools needed to tap these vast resources at a time when more energy is needed to fuel and feed a growing global population and to sustain the higher standards of living the world's people have come to expect.'

He then went on to discuss 'the recoverable part of liquid resources, which is what we can ultimately capture from the overall resources-in-place.'

As to proven recoverable reserves of conventional oil, these range from 1.2 trillion to 1.3 trillion barrels. These reserves can be expanded by 'increased recovery rates' in existing fields, made possible by technology, better data, and improved economic conditions, as well as new zones and field extensions. To appreciate the importance of this phenomenon, consider that a one percent improvement in recovery can represent an increase of some 80 billion barrels of conventional oil reserves, roughly equivalent to all of the OECD countries' current proven reserves. Despite recent advances, average recovery in the world's conventional fields remains at only about 35 percent, leaving 65 percent of discovered resources stuck in the ground. With technological advancements and aggressive targets for oil recovery improvement, the world as a whole could add up to a trillion barrels of additional reserves from known fields, a challenge that I have placed in front of the world's earth scientists.'

As to new, still to be discovered oil fields, 'most are expected to be found in the Middle East region, where the size of new discoveries is also generally larger than in other parts of the globe. Depending on just how conservative their assumptions are, analysts believe there are between 250 billion and one trillion barrels of conventional crude oil reserves still waiting to be found.'

Taking currently proven reserves, reserves growth in known fields and new discoveries together, Yum'ah said, 'we arrive at a conservative estimate of 1.7 trillion barrels of total conventional recoverable resources yet to be produced. In *(a more optimistic, ed.)* "target scenario", that number rises to more than three trillion barrels - a number I believe the world's petroleum industry can reach and therefore should pursue with all due diligence.' To this should be added 'the immense potential of non-conventional resources.'

Yum'ah argued that there are 'great opportunities to improve the recovery rates associated with bitumen and extra-heavy oil. Here, the recoverable part of global resources ranges between one trillion and more than two trillion barrels, depending on whether we opt for the conservative or "target" numbers. The technical, economic and environmental challenges associated with oil shales are even greater and admittedly difficult, though the massive scale of these resources presents a tremendous target for producers. Given these challenges, the estimates of recoverable resources from shale vary more widely, from less than 300 billion barrels to more than 700 billion barrels.' The Aramco executive predicted that oil shales 'will eventually be viable for future generations. Therefore, the conservative scenario estimates the recoverable non-conventional oil resources at roughly one-and-a-half trillion barrels, while the "target" scenario envisages close to 3 trillion barrels to be ultimately recovered.'

Based on these projections, Yum'ah concluded that 'the world seems to have over 3 trillion barrels of recoverable conventional and non-conventional liquid fuel resources if we opt for extra-conservative assumptions, and about 6 trillion barrels if we adopt the "target" scenario.' This is enough to cover 100 to 200 years of current demand. In other words, in the Saudi view, oil will be with us for a long, long time. ■

*'We are worried by the high oil prices. We did not expect this'*

**Andris Piebalgs**

EU Energy Commissioner

*'Don't blame us for high oil prices. We do what we can. We should sit together and talk hand in hand.'*

**Abdullah bin Hamad al-Attiyah**

Minister of Energy of Qatar

*'The good news of the World Energy Outlook is that we are not going to run out of oil by 2030. The bad news is that demand growth will be very strong and that climate change objectives will not be achieved. I see only one option for the future: renewables'*

**Andris Piebalgs**

EU Energy Commissioner