The Oil Drum
DISCUSSIONS ABOUT ENERGY AND OUR FUTURE

Reflections on ASPO 10, Vienna 2012 – Part 1

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On my first return visit to Scotland and Europe, I happened to be near the right place at the right time for my first ASPO conference since Pisa in 2006. In two parts, here are my thoughts on some of the energy related themes of the conference.

From the ASPO 10 Picture Gallery

Unconventional Oil and Gas

While there are big question marks about the financial and environmental sustainability of existing unconventional oil and gas production, I think it's fair to say that the industry has ramped up production of these low-grade resources faster than many peak oil forecasters anticipated.

But when it comes to how much more of this resource we are going to turn into flows of oil, the short answer is we still don't really have a clue. Euan made a courageous attempt in his presentation, with estimates for tar sands, EOR, tight gas, shale gas and coal-bed methane that respectively increase the ultimate recovery of oil and gas by more than 500 and 600 billion barrels of oil equivalent.

From an engineering point of view, it appears to me that access to the resource and energy return is sufficient for a good deal more tar sands production, although I have little idea how soon the availability of water might become a limiting factor. Otherwise it seems that value judgements by

the Canadian people themselves, about the level of mining they are willing to tolerate, will be the long-term deciding factor in how much of the tar sands are converted to oil. Having just spent two months in Canada, it does not feel like the Albertans are about to lose enthusiasm anytime soon.

Despite valid questions about the size of the accessible resource and how quickly it can be produced, peak oil analysts would be wise not to dismiss the future production as inconsequential.

In the short and medium-term, a contracting economy and a low oil price could easily disrupt additional development. Given that tar sands have high marginal costs, even existing operations could be shut-down by a weak economy.

Gas and Coal to Liquids

There wasn't much in the other presentations that has changed my view on Gas or Coal-to-Liquids (GTL, CTL). The capital costs for GTL plants are staggering and I can't see anybody confident enough in the long-term cost of the feed gas and value of the produced liquids to build many more such plants. The capital costs for coal-to-liquids are similarly staggering but it just may be that somebody with ready access to cheap coal gets desperate enough for liquid fuels that they are willing to stump up the cash. If so, it would be the realisation of my recurring climate nightmare.

Geopolitics of Oil

Out of the first day of the conference, it was the discussion by Michael Klare and Karen Smith-Stegen about the geopolitics of oil that I found most interesting. In short, it's as important as it ever was, but there are new players, new themes and new front lines.

The Middle East

Unrest and discontent in the Middle East is still easy to trace back to decisions made by the imperial powers after the First World War. And the importance of oil is everywhere, not just in the places that first come to mind. Egypt used to be a net oil exporter. But with the population growing almost four-fold in sixty years, and oil production declining, Egypt now consumes all of its oil internally and will soon depend be competing for imports. With such a turn-around in their balance of trade, it looks like a tragic story of riches to rags, and not hard to see how that could lead to desperation among the deprived young men and women of Egypt.

How the sabre rattling between Israel, Iran and the United States will play out is anyone's guess, but Michael Klare thought the June meeting could not pass without either some compromise or confrontation.

China

The new power struggle of course is between China and the United States. The optimistic American view is that with relatively stable demand and strong production from Canadian tar sands, Gulf of Mexico and Brazil that U.S. dependence on the Middle East may actually fall. At the same time, Chinese domestic production is flattening out while consumption continues to rise, so their dependence on the Middle East and Africa grows ever stronger. One consequence is that China will depend critically on transit of oil around south-east Asia. Throw in some contested resources in the same South China Sea off the Philippines and you can see why the U.S. has just refreshed its relationship with the Philippines and planted naval resources in the area. Less strategically but still quite symbolic, Australia has also signed up for a new phase of military

cooperation with the United States. Not something I would have chosen if I'd had any say in it.

Canada and the United States

Issues of access to oil resources are also playing out in the heart of North America. Observers in other parts of the world may not be aware how politically significant the approval or otherwise of the Keystone XL pipeline has become. The pipeline is intended to transfer Canadian oil sands production to markets in the U.S. While currently blocked by President Obama, Mitt Romney has promised to sign the approval on his first day in office. It appears that this is one element of his election platform, which will promise to return America to the era of happy motoring.

Biomass and Heating Oil

One of the sponsors of ASPO Vienna was Pro Pellets, an Austrian company providing wood pellets and high efficiency burners for home heating.

The pellets are delivered by truck and are blown into household storage and to the burners somewhat like a liquid. By maximising the time in the combustion zone and controlling the temperature of combustion and oxygen supply, they claim that combustion is close to 100% and emissions simply CO2 and water. (What happens to the nitrogen and everything else in the intake air?) The burners ignite and dose the pellets automatically so fuel use is well optimised to provide just the amount of heat required.

Wood pellets are about half the cost of heating oil, but the downside is the capital expense. 12,000 euros for a household system is a big investment (and would normally be combined with solar thermal). But 2,000 euros for a simple room heater fed with bagged pellets is a good deal more affordable.

Austria seems to produce and use quite a large amount of biomass in its energy mix. It would be good to know more about where this is produced and in what quantities. There are also quite significant imports from North America. Apparently forestry areas that used to supply paper mills are now exporting to Europe as the demand for paper has fallen?

Biomass for Heat rather than Biofuels

The key point here is that biomass is much more efficient if you use it directly, rather than messing around with it. Simply cutting and drying the wood and converting it to pellets involves a lot less energy inputs than the complex process of trying to convert corn and other biomass into biofuels.

Given a limited amount of land that can be used to grow biomass, it does seem more sensible and efficient to replace heating oil with wood pellets than to displace gasoline with ethanol from corn. The logical conclusion is that the amount of land currently growing corn for ethanol production would be better off turned to short rotation forestry.

Living in Australia it's easy to forget about how much heating oil is used in Europe and North America. Whether it's wood pellets, gas, solar thermal, heat pumps or a combination (including turning down the thermostat) there are several ways in which 5-10% of the world's oil consumption could be switched without any great difficulty. That alone makes for a pretty useful wedge of displaced oil consumption.