

Oil Depletion or Depleted Policies?

Dr Robert Arnott
Oxford Institute for Energy Studies

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Good morning ladies and gentlemen and thank you for inviting me to participate in this debate today.

When I was first asked to participate, I have to admit being a little reluctant to accept.

After all, this debate has over time become very polarised.

Once I had declared my intention to speak I was immediately lobbied by various groups asking me which side of the debate I was on?

Whatever your own view, I do not believe it is helpful to the understanding of the question if we choose sides.

It seems to me that whether you listen to the pessimists or the optimists, conventional oil could peak from any time between today and sixty years hence.

In essence therefore, there is only one side to the debate, with the importance of peaking being dependent on your own personal discount rate.

Therefore if conventional oil is going to peak at some point in time, the more important question is surely, what is the importance of this event and what should be done about it?

The pessimistic view suggests that we urgently need to promote alternative fuels and launch off-oil protectionist policies.

However, this could lead to rushed and ill thought through policies as we all know what happens when governments think there is a crisis.

The optimistic view says, no problem, carry on consuming like there is no tomorrow.

But polarising the discussion like this will get us nowhere, because Governments will view this as occurring beyond the lifetime of their own period in office and will carry on with business as usual.

Therefore, what I want to examine in this talk is the whole issue of how oil is brought to the market...,

what are the constraints, what is the impact of decline rates and how the activities of companies and governments can accelerate or defer oil production.

One of the most important trends that has occurred over the past eighteen years has been the erosion of spare capacity.

For two decades we have been living in a world where spare capacity has been taken for granted.

We have taken this OPEC spare capacity, which has been an accident of history, for granted.

However, from a peak of around 9 million b/d in the 1980s this has fallen to less than 1 million b/d today

or even less if one takes into account the effective capacity of different crude oil types. The consequence of this erosion in spare capacity at a time when global oil demand has surged is the main cause of current oil price strength.

It is not, as some commentators have speculated, a symptom of 'peak oil', in my view.

As far as I am concerned the real issue going forward has more to do with investment than with near term concern over the resource base.

We need to understand in much more detail how oil can be brought to the market.

In this respect I would like to cover three main areas:

1. Exploration
2. Mature provinces
3. New legacy assets
4. Manpower

1. Exploration

With respect to exploration, the live issue at present is whether companies are able to access those undiscovered reserves and acreage in the first place and whether they are actually investing enough to find new reserves?

Although we have seen many charts showing that the volume of new oil discovered has apparently peaked, one must also consider the impact of corporate strategies on that profile.

For the past decade the major private oil and gas companies have focussed their efforts on harvesting producing assets.

In their determination to meet by the holy grail of Return on Capital Employed targets, value for shareholders was not to be found in investing capital in a low oil price environment....

But in cutting costs and maximising the returns from existing assets wherever possible.

They have under-invested in order to boost returns to shareholders.

In essence, one could argue the private oil industry has transformed itself from one run by oil men to one run by accountants.

However in the past three years, with reserves replacement levels falling and production growth failing to meet corporate targets, companies have tried to kick start growth.

They have realised now that they must invest more money in exploration.

So take the example of Shell, the reserves recategorisation was of course a serious issue but it has acted as a catalyst for change. That company has now ramped up its exploration budget in an effort to go after what it describes as 'big cats'.

For the resource holders, the presence of spare capacity has always acted as a barrier to new exploration.

Why on earth would they want to invest in more idle capacity, when their stake holders had a greater need to cash?

So for example in the case of Saudi Arabia, it claims that there has been no real need to pursue an aggressive exploration strategy, and argues that it allows sufficient money in its budget merely to replace annual production.

But are companies searching in vain for resources that are simply not there, as the pessimists would have it, or is the resource base limitless apart from the issue of access?

This year the major private oil and gas companies are forecast to return in excess of \$18 billion to their shareholders.

Is this a reflection of a lack of opportunities in traditional basins or simply a problem of access?

If one listens to Lord Browne there are limitless opportunities. In contrast, if one listens to Thierry Desmarret then there is a real problem.

I do find the whole issue of access interesting because there seems to be relatively few countries in the world where new oil exploration is not possible.

Yes, exploration is not possible in Saudi Arabia and Mexico and for the moment for security reasons Iraq.

Yes, there are also issues in more traditional regions such as North America where exploration is not allowed in ANWR, offshore Florida, in areas in the Western States and offshore both coasts.

As an aside, I have to say that I think preposterous of the IEA to demand open access to non-OECD OPEC members when some of its own member states refuse access

That said, outside these areas it is possible to explore in many areas so long as the right terms and conditions are accepted.

We all understand that it takes two parties to agree a contract, so it does seem to me that there are probably lots of opportunities out there so long as companies are prepared to accept more stringent terms.

I will turn to the issue of what these might be later.

2. Mature fields

I want now to turn to my second point relating to mature fields.

Over the past year or so we have been subjected to a vast torrent of literature which suggest that the big oil fields of the world are now mature, that they are in some cases over 20 years old and that once they go into decline there will be nothing left to replace them.

We have heard this today and recently at the Oil and Money conference where Matt Simmons reiterated his strong views with respect to the Saudi Arabian fields.

There is no doubt in my mind that the decline rate in some mature fields is a serious issue.

It seems to me that whilst technology might have been the catalyst to accelerate production it has also been the probable cause of accelerated and steeper decline curves.

We are experiencing this in the North Sea today and many other mature provinces.

However, I think we need to draw a distinction between those provinces where private oil companies or individuals have been able to exploit reserves with little or no government restrictions...

...indeed where there was a shared interest in the rapid 'cash-today' strategies...

from those where government ownership or policies have limited the rate of exploitation.

In this respect the one extreme could be said to be the Lower 48 model of North America with the other extreme being Saudi Arabia which has the potential to increase production to 12 million b/d for at least 50 years or 15 million b/d for 26 years.

In the one case, extraction and maximum value now, in the other case extreme resource conservation and management.

If one looks across the world, many countries lie on a scale between these two. For example, Norwegian production has been subject to greater Government oversight than the UK.

The point I would like to make is that when we consider Hubbert curves and decline rates...

we should take into account the influence, or not, of the mix of strategies of government and private agents, government policy and the rates of investment.

It is not a surprise to me that the Hubbert curve seems to work best in areas where exploitation has been virtually unrestricted....,

as is the case in the Lower 48 and works least in areas where there has been severe resource management.

What surprises me though is how the Hubbert curve has been taken as the universal model and when it has not fitted the pattern of production it has been adapted, modified and in some cases even doubled up to try force find peak oil.

This issue of whether the resource base has been exploited with or without restriction is extremely important and can sway judgments.

Private oil companies try and maximise value for shareholders and over the past few years they have tried to accelerate cash flow and returns.

It is therefore no surprise that they are the ones suffering most from field decline rates.

The world average decline rates might be in the order of 3 to 4 per cent but the private oil companies average decline rates are in the order of 7 to 9 per cent.

To put this in context, of all the production that the private oil companies are forecast to bring on stream, nearly 70 per cent of this will be required to offset the impact of decline leaving just 30 per for growth.

In provinces where the resource owner has control over the production policy the impact of decline rates is less clear. Unfortunately because of confidentiality this has led to deep suspicion.

The point is we cannot simply transfer what we know from the unrestricted private sector to the restricted national resource holders.

As an example one need only look at the UK which produced 2.9 million b/d at its peak with a reserves base of 4.5 billion barrels and yet Saudi Arabia produces 9.5 million b/d with a reserve base of 263 billion barrels.

In my view the real issue is not so much resource scarcity in the latter case but lack of investment.

But is the problem in mature fields a problem brought on by the majors themselves?

I have discussed the issue of unrestricted government policies. I have not discussed the issue of restricting reinvestment.

Lord Browne once said that by cutting capex by \$1 billion in any year affected North Sea production by 100,000 b/d the following.

What he did not go on to say was that in an effort to boost returns the company reinvested just 12 per cent of its cash flow derived from the North Sea back into the North Sea last year.

In the case of Shell in Oman the decline in production from 900,000 b/d to 700,000 b/d has been attributed by some to the impact of cost-cutting.

Even in countries where resource management plays an important role lack of reinvestment can affect decline.

For example in Mexico the government take some 85 per cent of Pemex's cash flow, stripping it of the necessary resources to sustain production.

In my view lack of reinvestment plays and will continue to play an important role in the timing of when a province goes into production decline.

You cannot continue to expect to obtain something for nothing.

4. New Legacy Assets

Earlier on I stated that the private oil industry has only recently moved on from 'harvest' to 'growth'.

Unfortunately this change has come too late to offset the impact of a sharp resurgence in oil demand.

Despite increases in overall development capex there is a lag time before the new legacy assets will come on stream,

Before the deepwater provinces are producing at their maximum potential and several years before we see what will happen in Russia and the Caspian.

The oil industry like the whole energy sector is made up of long term fixed capital and there is inevitably a lot of friction in bringing on new oil supply.

But what I would like to question here is whether investment remains constricted by internal measure and hurdles.

Apart from the issue of whether Return on Capital Employed, or ROCE, is the right measure to use...

For the record I think not....

I do find it absurd that in this age of low inflation companies are still hoping to generate real rates of return in excess of 7 or 8 per cent or higher.

Inflation has fallen but the discount rate that many companies are using has not fallen in line.

The result of course is that many projects fail to meet internal criteria and are deferred.

This is all very ironic.

In effect it has meant that companies have been driven into retaining assets that they should have disposed of and have not invested in new assets for growth.

It is even more ironic that the very company that introduced ROCE to the market as a benchmark for performance has been the first to publicly retreat from the metric....

It is also the only company that says it is not short of new opportunities.

That might give you some food for thought.

In this oil price of \$50 per barrel it might seem absurd to be talking about constraints to investment but this is a reality.

Recently, when asked whether Shell should be thinking about investing more money to develop new oil and gas provinces, Jeroem van der Veer replied that it simply would not be possible....

Not because of cash or projects he claimed....

But because of manpower and logistics.

4. Manpower

This brings me to my final point.

The industry as a whole is not getting any younger.

The average age of the private oil industry is now 49 and over half the workforce is due to retire within the next 10 years or so.

The industry has to attract new and young talent but is failing to do so.

The legacy of hire and fire, the environmental record as portrayed by NGOs not the industry, the poor image of capital intensive industries in schools, the dream of a steel and concrete-free 'dot.com' world returning all act as a barrier.

In my view unless this is overcome, manpower will act as a real constraint on bringing new oil to market. This inevitably is likely to lead to higher costs as more generous employment terms are offered

5. Conclusions

So at this point let me round up my thoughts.

The title of this talk was Oil Depletion or Depleted Policies?

I have no doubt that oil is depleting. It has been since the first drop of oil was produced.

However, I do think that we can do things to address the issue.

To my mind though the most important issue that we need to consider is how new oil can be brought to the market.

In this respect I believe the private and national oil companies are responding to the lack of spare capacity.

The private oil companies are increasing exploration expenditure and increasing capital expenditure in new legacy assets.

Equally the national resource holders are beginning to increase investment to try and build supply.

At the same time one cannot ignore the patterns of energy demand.

We have heard that there are no substitutes for oil.

Yet, oil has been all but substituted from the power generation market and is being substituted in the industrial market.

It is only in the case of the transport sector where oil remains dominant.

Yet even here we are seeing the increasing penetration of hybrid vehicles, biofuels and GTLs...

and this is before we even consider the impact that new technologies and inter-modal shifts might have on suppressing demand for oil by transport.

Ken Livingstone's congestion charge was not possible just 15 years ago because we did not have the technology and this is influencing inter-modal shifts in transport!

It would also be very interesting to know what Herr Fischer and Herr Tropsch would think if they were here today, listening to this debate.

So is oil depletion no problem, a concern or a crisis?

Well in my view it has always been a problem ever since the first drop of oil was produced.

Is it a concern? Yes but things can be done to mitigate it and this depends upon personal, corporate or political priorities.

Is it a crisis? Absolutely not!

Thank you very much for your attention.

Rob Arnott
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