

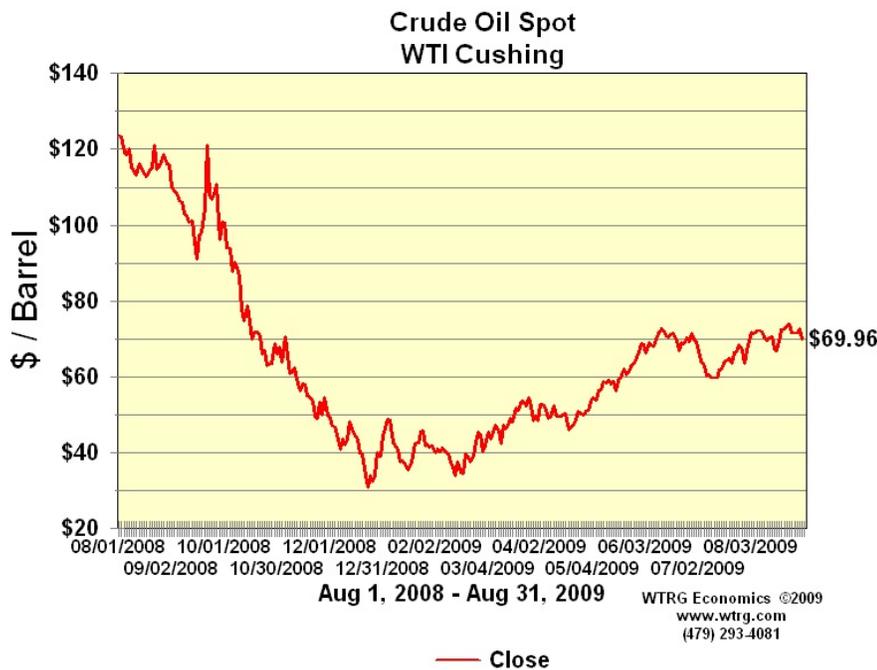


2007 - The Year in Review

Posted by [Luis de Sousa](#) on December 31, 2007 - 12:01pm in [The Oil Drum: Europe](#)
Topic: [Miscellaneous](#)

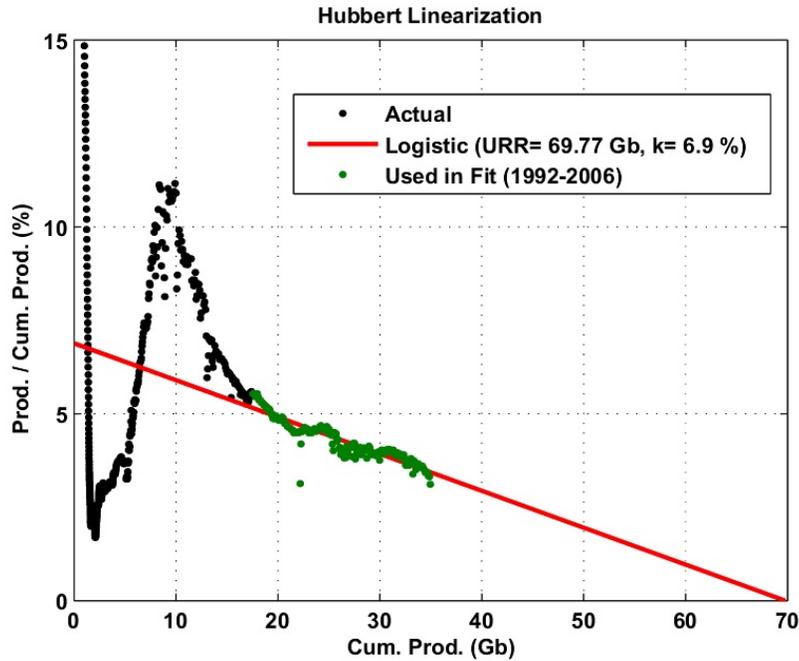
Tags: [year review](#) [[list all tags](#)]

This is a collection of posts that reflects the most important events of 2007, from an energy perspective, or that otherwise were relevant on Theoil Drum.com.



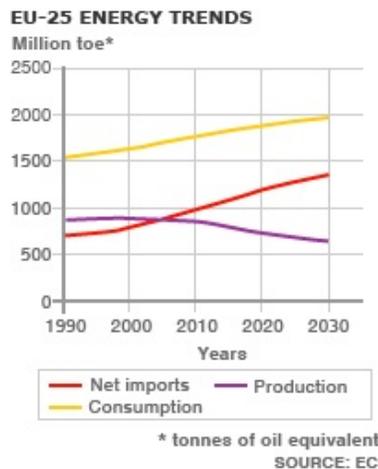
WTI throughout 2007.

The year started with low oil prices easing somewhat the fears of an energy crisis. With the dollar rallying, WTI would eventually sink below \$50 per barrel. But world oil production wasn't growing and the performance of some producing regions were showing concerning signs. [Mexico was clearly suffering from Cantarell's decline](#), the [Caucasus kept raising question marks](#) (a situation later updated [here](#)) and there was also [Saudi Arabia](#).



There wasn't much doubt Mexico was in for the decline.

Energy was starting to have some grip on the political agenda, the European Commission presented [A New Energy Policy for Europe](#) that proposed some interesting measures but still left the feeling that [at least part of the picture was being missed](#). In the United States the [State of the Union](#) address by the President to Congress showed to have a [higher energy content than usual](#). The focus on [agro-ethanol as an alternative to gasoline](#) seems to be growing in the US, despite all the uncertainties about this strategy.



Europe at the Crossroads.

By the end of the month the [Soil Association Conference](#) was dedicated to Agriculture in a post-peak oil world, were some of the modern Hubbertian luminaries were present. The concept of Peak Oil is starting to concern people working in important sectors of our society.

In January, Chris issued a post trying to connect the dots between [Peak Oil and Climate Change](#). The first of such articles on TOD. In February the [first part of the IPCC report was published](#) portraying fossil fuels forecasts that probably made some people blush at TOD's nemesis, CERA. Of all the fossil fuel forecasts issued worldwide, the one made for the IPCC report is the one that gets more media attention and is read by more people. Unfortunately this forecast is probably the

Meanwhile Euan [added some cold water to Mexico's boiler](#), the region is in decline but not in free fall. Even so, some months later, [the country was showing concerning signs of social unrest](#) in face of this decline.

February witnessed also the introduction of TOD into the unexplored seas of Anthropology and Neuroscience. Nate tried to explain [why humans have a hard time preparing for the future](#) and acknowledging the importance of problems like Peak Oil over daily routine worries. This effort would grant Nate an invitation to speak at the ASPO International Conference In Cork.

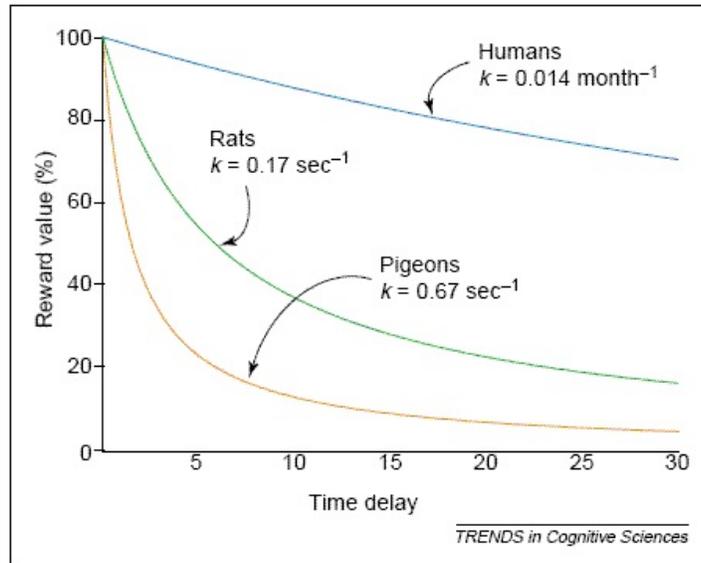
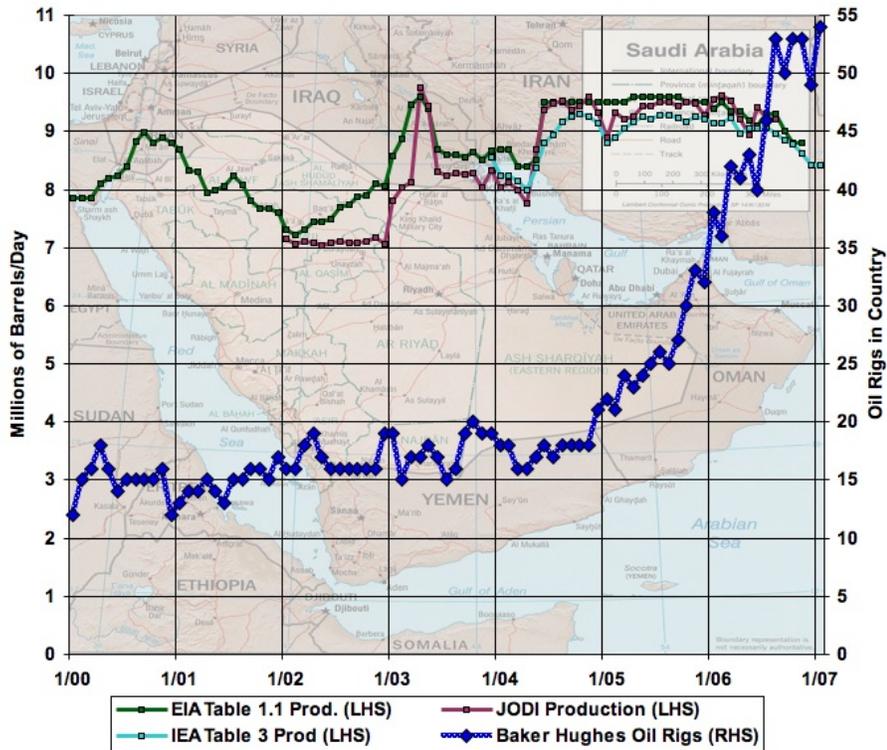


Figure 3. The discounting rate describes the steepness of the discounting function – that is, how quickly the reward is devalued over time. The hyperbolic model of discounting is described by $V = A/(1 + kD)$, where V is the subjective value of the reward, A is the amount of the reward, D is the delay to reward, and k is a free parameter describing the discounting rate. This discounting rate k has been estimated for pigeons and rats, suggesting that both species rapidly devalue food delayed in a matter of seconds [27,28]. Similar experiments on humans suggest that we devalue money at a much lower rate, on the order of months rather than seconds [29]. (Note that the Time delay axis has dual units. Discounting functions plotted from k values reported in Mazur [27], Richards *et al.* [28], and Rachlin *et al.* [29]).

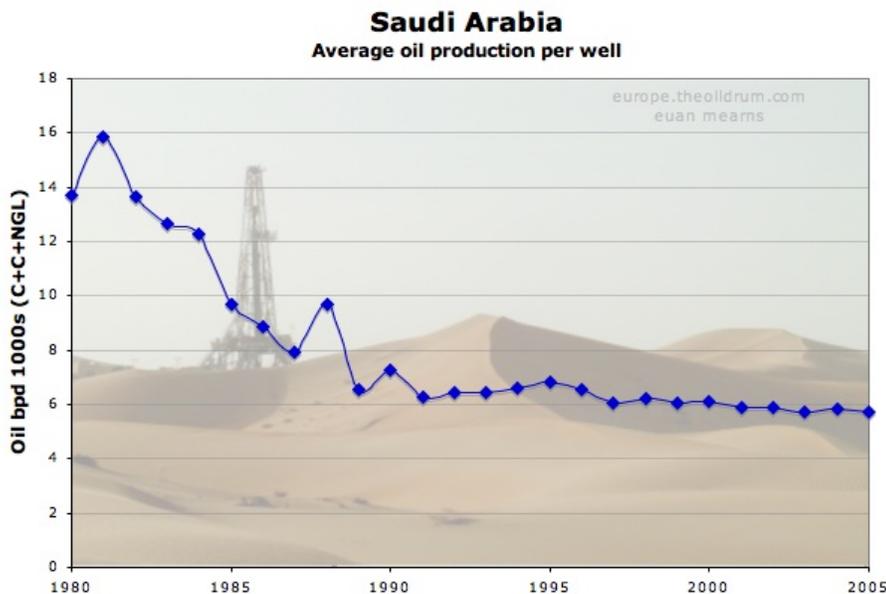
How steep are your discount rates?

In the beginning of March Stuart had a post on [Saudi showing a 8% decline during 2006](#). The article swept the Peak Oil community and broke all visit records at TOD. It seemed that geologic constraints were seriously impairing the Saudi production capacity possibly due a to production crash in Ghawar. Stuart offered a 1000\$ bet that Saudi production would never cross north of 10.7 Mb/d.



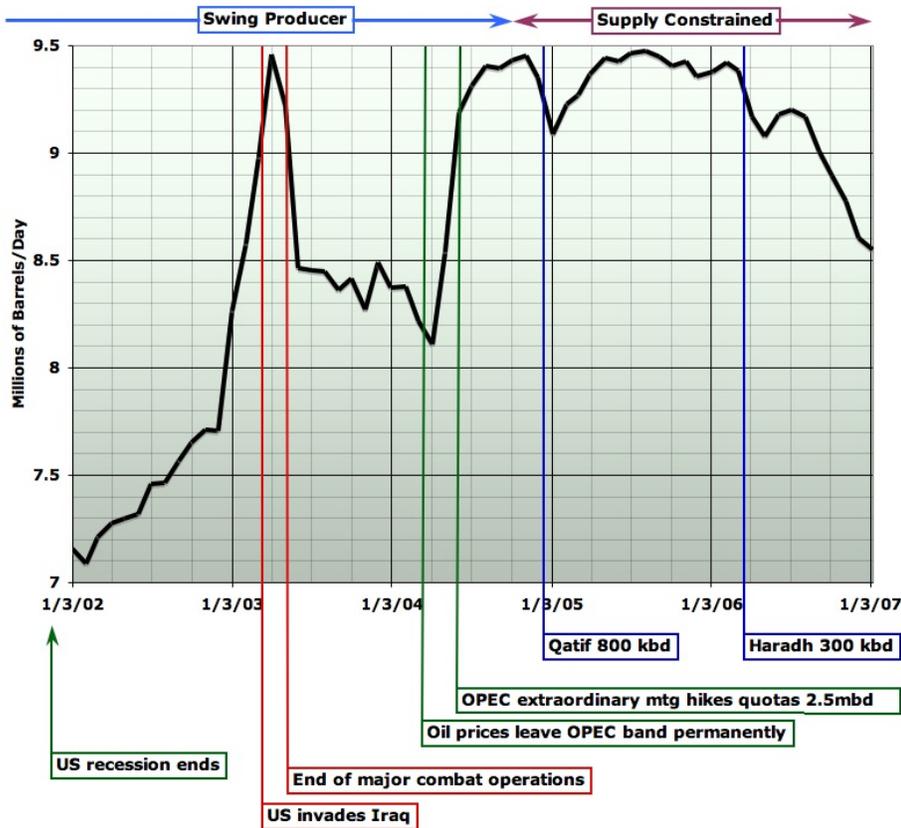
A graph that left a lot of people wondering.

The scepticism towards Stuart's conclusions came from inside TOD itself. [“High stakes and long odds!”](#) Euan called Stuart's bet. Stuart reaffirmed that [Saudi's decline wasn't voluntary](#), but Euan retorted that the [Saudis know better than anyone how to manage their fields](#).



Maybe the sky isn't falling after all.

A fabulous duel evolved between Stuart and Euan that would endure for two months. It all came down to Ghawar and both men dived in to assess the field's depletion state.

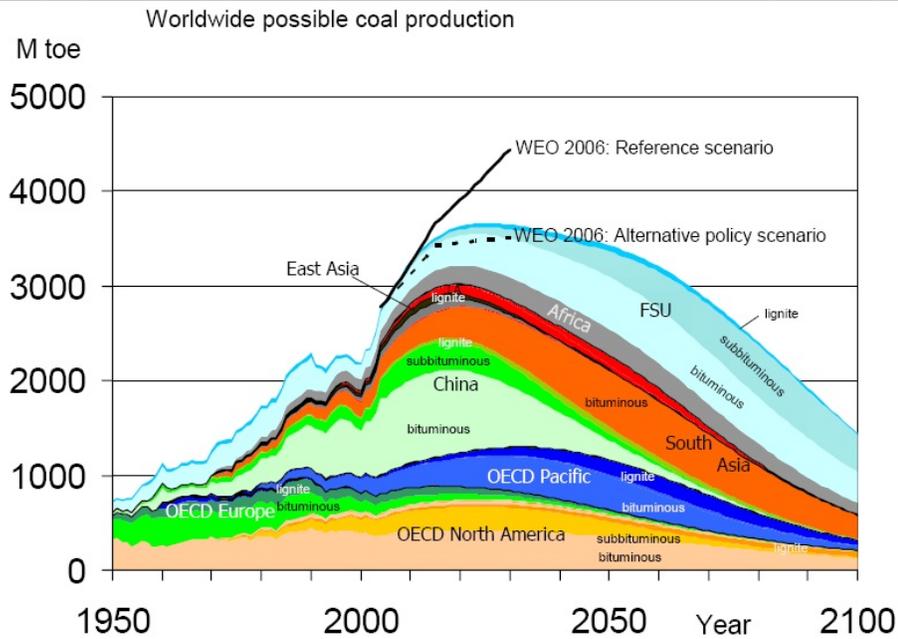


Or is it?

On another field there was more rattling. Robert had a [post criticizing HL that caused some stir](#), given TOD's role in popularizing the method. Robert came on the attack again [casting more doubts on the blind application of the method](#). Later in the year, friend of TOD Jeffrey Brown took the [defender role with a guest post](#). This subject was revisited several times during the remainder of the year and the debate still goes on, especially around the conceptual assumption that oil production should follow a logistic cycle.

By the Ides of March came out the [GAO Report on Peak Oil](#). The main conclusion made by the authors was that the US government lacked a proper plan to deal with the problem. The report made some lines in the US mainstream press and [suddenly Peak Oil seemed an unavoidable issue](#).

April was a time of revelations. The first one came by the hand of Shaun Chamberlin: [we should expect a Coal Peak in less than 20 years](#). This post was based on the assessment undertaken by the Energy Watch Group and caught a lot of people by surprise. Some other people weren't really caught and this would develop into a very interesting debate throughout the year.

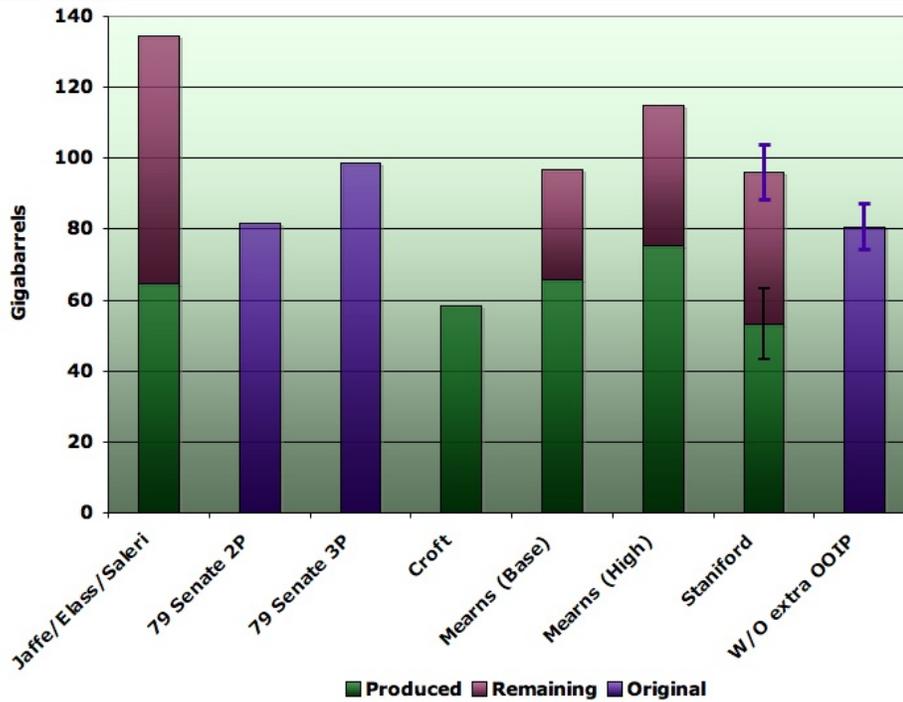


(Source: Energy Watch Group)

A graph that stunned the world. And would generate a lot of controversy.

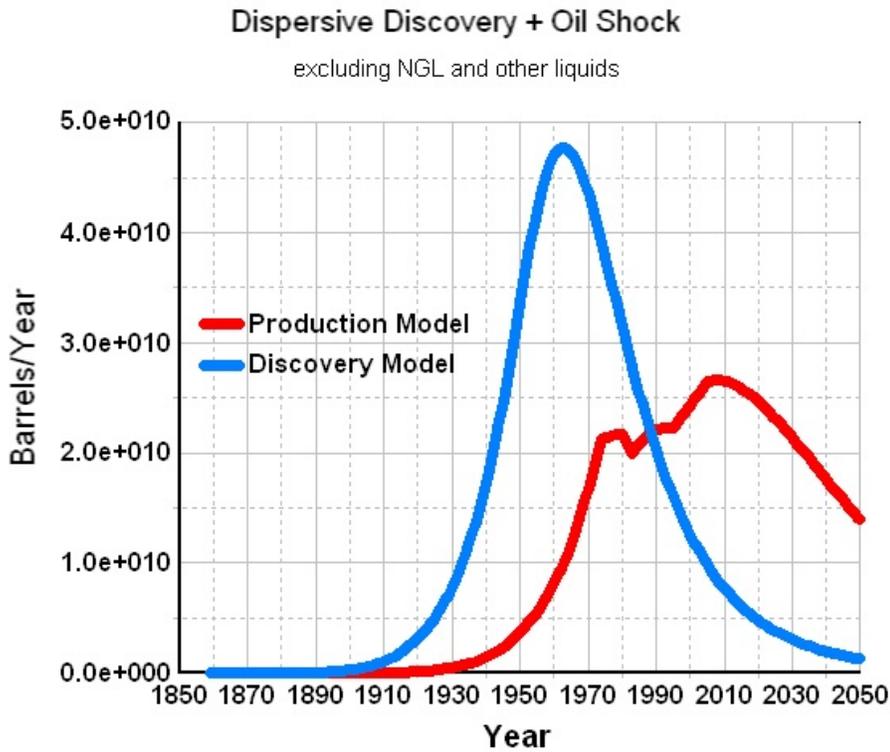
The work on Ghawar was also bringing some revelations: [the northern sections of the field were in an advanced stage of depletion](#) and there were [official estimates of Ghawar at 50% depletion levels](#). In the discussion threads there were emerging very helpful comments and info (especially some charts that TOD commentators dug out) that improved considerably the final work made by Stuart and Euan.

The Ghawar Omnibus was finally drawing to an end. Euan was the first to publish his results, commencing by [addressing his methodology](#) and finally [presenting his results](#). [Stuart's assessment](#) came already in May in another thorough post. Using two different methodologies they both got to a ballpark number of 60% for Ghawar's depletion state, with most of the field's southern oil still in place. The largest oil field in the world is clearly on its latter life but not facing imminent decline. Still, Ghawar should lose its stature as Saudi's largest producing asset in the not too distant future. If the remaining country's fields can cover that gap or not was a question left unanswered.



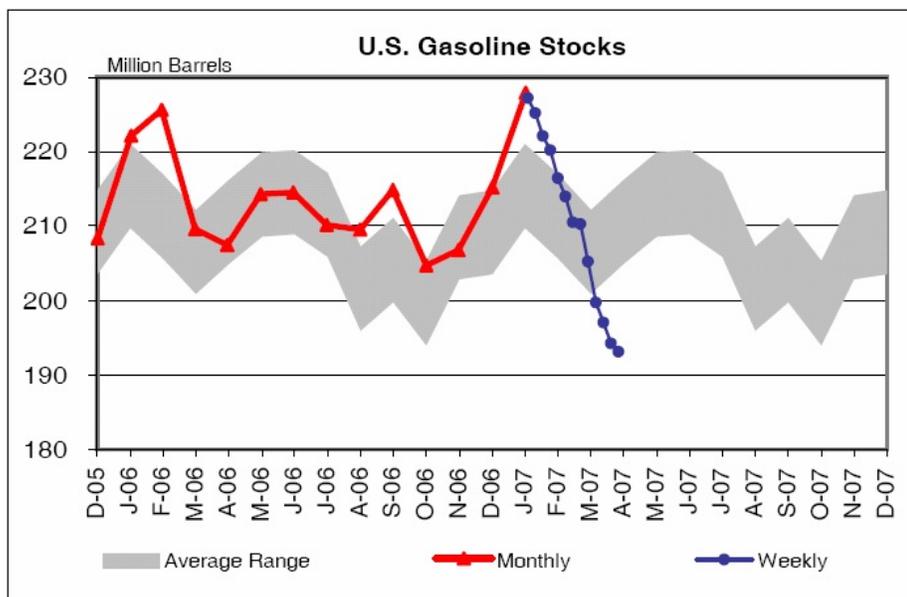
Euan's and Stuart's work ended up agreeing quite closely.

Also in April we finally had the [Shock Model presented at TOD](#), the mathematical method developed by WebHubbleTelescope, a long time TOD commentator and the individual behind the [Mobjectivist](#) weblog. Khebab went further and [improved the model](#) producing a series of different forecasts. The collaboration with WebHubbleTelescope continued with two more posts published later in the year, one with a [new discovery model](#) and a following improvement that firmed the name of [Dispersive Discovery Model](#). If you felt bewildered by all this mathematical wizardry, just consider that no matter how complex these models may look, they all turn up in a short term Oil peak.



"Heavy duty" math reflects a short term peak.

During May a gasoline price shock was developing in the US. After being at record levels in the beginning of the year, US finished products stocks were now below average range levels. TOD started following [This Week In Petroleum](#) a weekly release by the US Department of Energy, assessing among other things the current stock status. [Record demand and lower refinery output](#) conjured to create the sharpest recorded decline in US gasoline stocks.



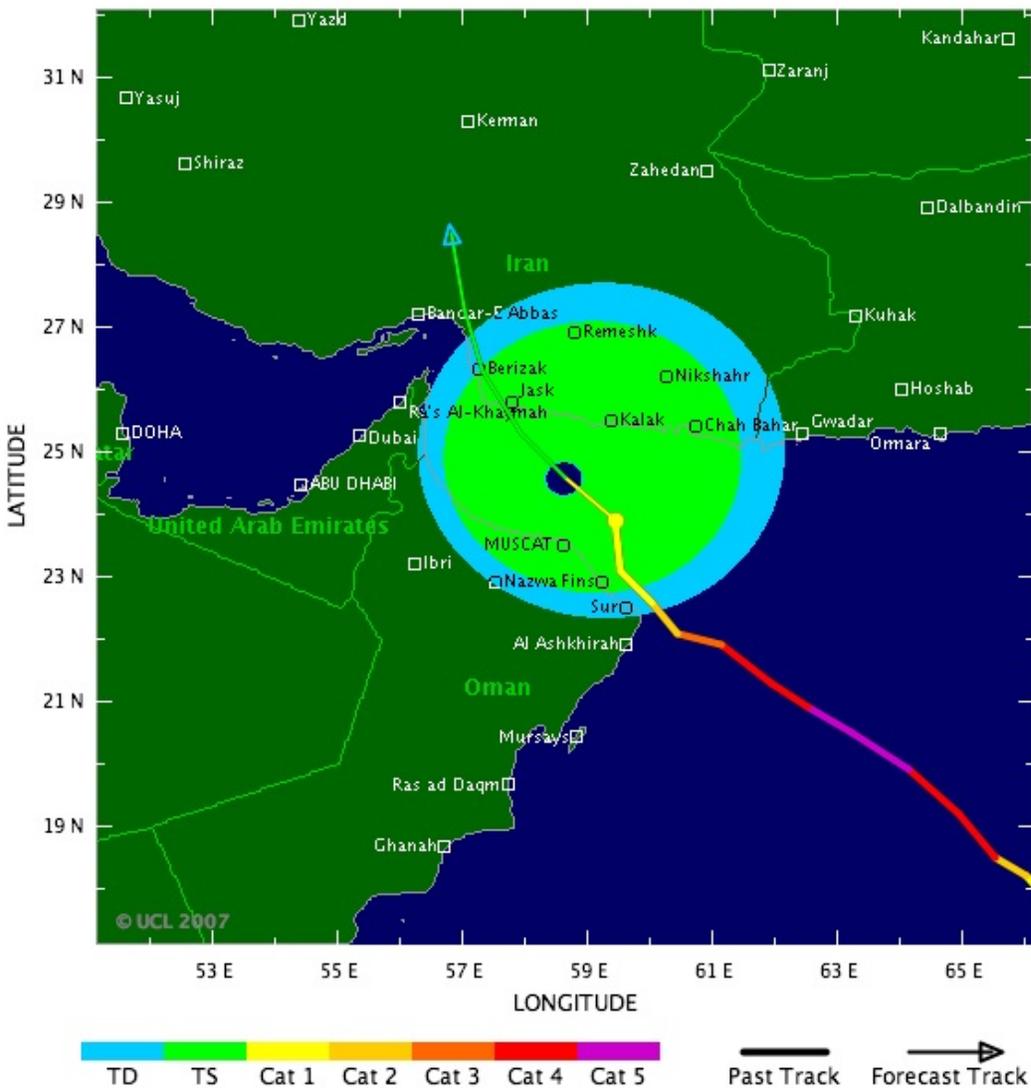
Running on empty?

Finished products imports would eventually pick up and from June onwards gasoline prices eased

up, although making them climb elsewhere. Several similar articles appeared in the international press [blaming oil producing countries for the current price spike](#), due to their gasoline subsidy policy. This logic failed to acknowledge that [an unfavourable environment for the refining business had been developing in the US](#) and that gasoline prices in this country [are closer to those practised in subsidizing countries than in those that tax gasoline](#).

In May Rembrandt started the [Oil Watch Monthly](#) series, a thorough portrait of oil production from a global and regional perspective, made by ASPO-Netherlands and published by TOD:E.

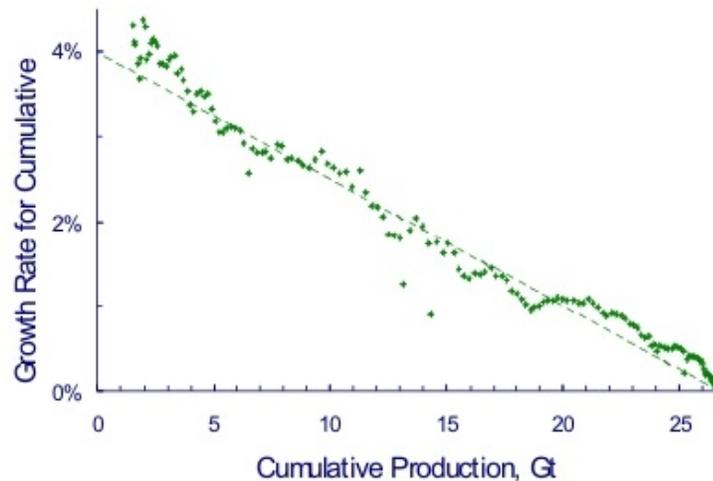
In the beginning of June, meteorologists stunningly observed a cyclone forming in the Arabian Sea and heading west towards the Persian Gulf. [TOD followed this event very closely](#) and for some hours it seemed like most of the oil coming out of Gulf would be shut in. Gonu (the cyclone's name) would eventually make landfall in Oman with heavy material costs and unfortunately some lives lost, but oil shipments weren't visibly affected.



What was a cyclone doing in the Persian Gulf?

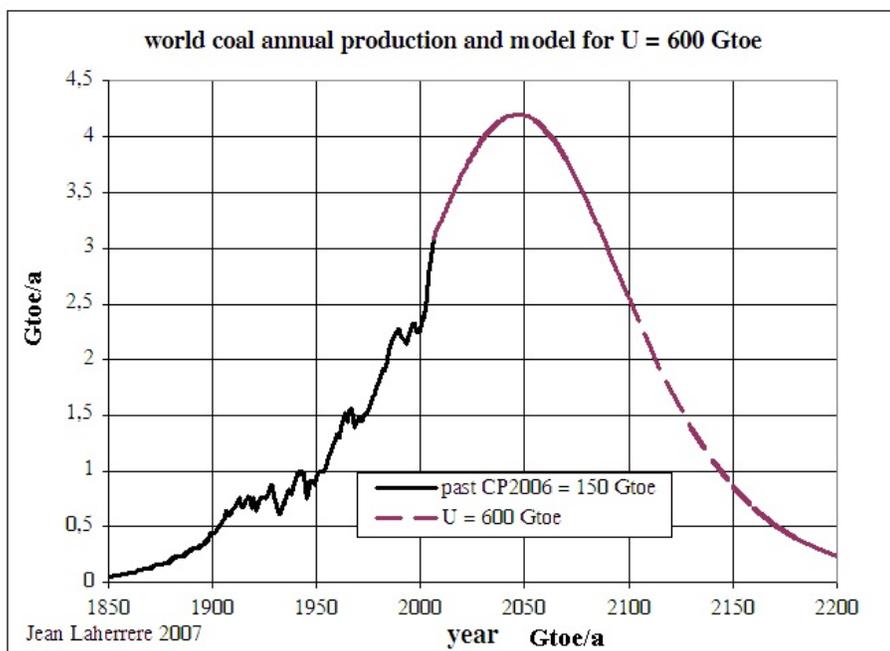
By this time the Coal debate was heating up. Previously Chris reported on a new paper by James Hansen implicitly [acknowledging problems with the fossil fuels forecasts present in the IPCC report](#); then there was a report by the US National Research Council casting doubt on the country's reserves numbers. And in June TOD hosted a post by David Rutledge that in trying to get a clearer picture on [Climate Change factoring in the Hubbert Peak](#), produced another forecast

for Coal peaking before mid-century. As did the Energy Watch Group, Dave Rutledge undertook a thorough country-by-country analysis leading to a similar conclusion. [Heading Out stepped on the brakes](#) and highlighted that the picture can change if [deeper seams are reached](#).



Dave Rutledge came to TOD to talk about Climate, but this chart with HL applied to UK Coal production would cause a stir on its own.

Later Doug and Chris would put together the [various negative reports on Coal](#) that came out during these months. Heading Out continued with a series of posts presenting counter arguments. [British reserves](#) were an especially hot topic in the comment threads and [Technology](#) showed to have a crucial role in this discussion, leaving the perspective of unlocking reserves inaccessible today. In August [TOD heard Jean Laherrère on the subject](#), it became apparent that a considerable degree of uncertainty remains around Coal reserves estimates and hence his higher forecast (peak by mid-century), but all in all it is a finite resource subject to depletion.



Jean Laherrère's outlook for Coal wasn't as bad as the previous ones, but still reminded that it is a finite resource.

2007 can be left to History as the year Coal stopped being infinite. It is today much better perceived as a non-renewable resource about which centennial R/P rates are meaningless. During 2007 China became a net importer of Coal and closed down its Fisher-Tropsch program for lack of fuel; by the end of the year international Coal prices had doubled. Either peaking later or sooner, Coal has to be regarded henceforth as a limited resource, not because extraction will start declining in the near future but simply because it is failing to meet an overwhelming demand.

As the Coal discussion evolved there were growing concerns that the [financial markets could be on the brink of a serious disruption](#). The credit bubble seemed set to burst and [washing away entire economic sectors](#). [TOD:C followed the development of this crisis very closely](#) maintaining a watchful eye on these matters that would latter be baptised the [Finance Round Up](#).

In June Jeff Vail dived into the Nigerian situation that was regularly making headlines. A previous report had observed the [ethnic pressures gathered in country](#) and a second looked into [the general strike and the growing unrest](#) among the Nigerian people. Nigeria would keep making headlines but reaching the end of the year relatively calm. The fact that International Oil Companies continue exploring for oil in such environments is by itself a revealing fact.

In July the [Medium Term Oil Market Report](#) was released by the IEA. A bombshell, an oil shock was clearly on the making and the international watchdog wasn't shying away from telling everybody about it. Days later, Claude Mandil, the IEA's headman, [gave an interview to Le Monde](#) that dismissed any doubts, even if peak oil was not in his perspectives for the short term, trouble was ahead in the following winter.

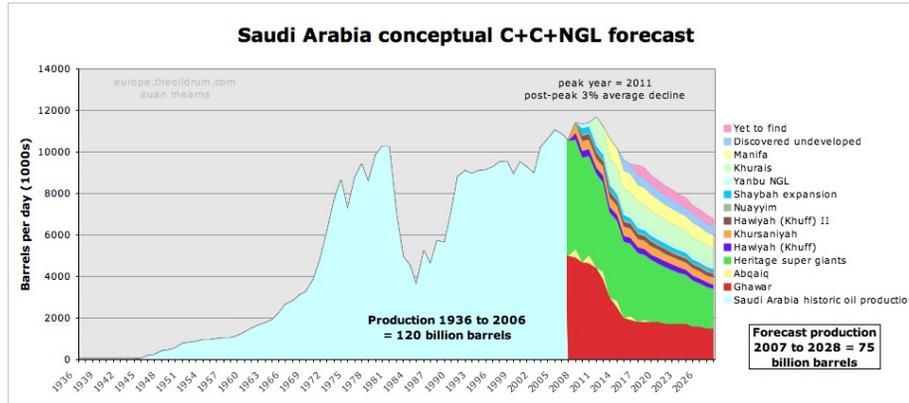
And then came August, and instead of vacations the Financial markets got headaches. The [Credit Crunch was here](#), a series of bad news and suddenly no one was lending money to anyone. The [Bubble was finally bursting](#) promising to spread throughout the banking sector if not deeper. These events were leading to fears of an impending [Deflationary Recession](#) of which we were seeing the first stages of development.



The picture of a crunch.

There was also a resurgence of the Ghawar debate during August, [after some alternative assessments emerged](#) that contrasted with Euan's and Stuart's. The former went on to produce a [conceptual forecast for Saudi](#) that presented a peak in 2011. This forecast would prove to be

remarkably close to that made ten years earlier by Walter Youngquist and Richard Duncan, two influential modern Hubbertians in the US.

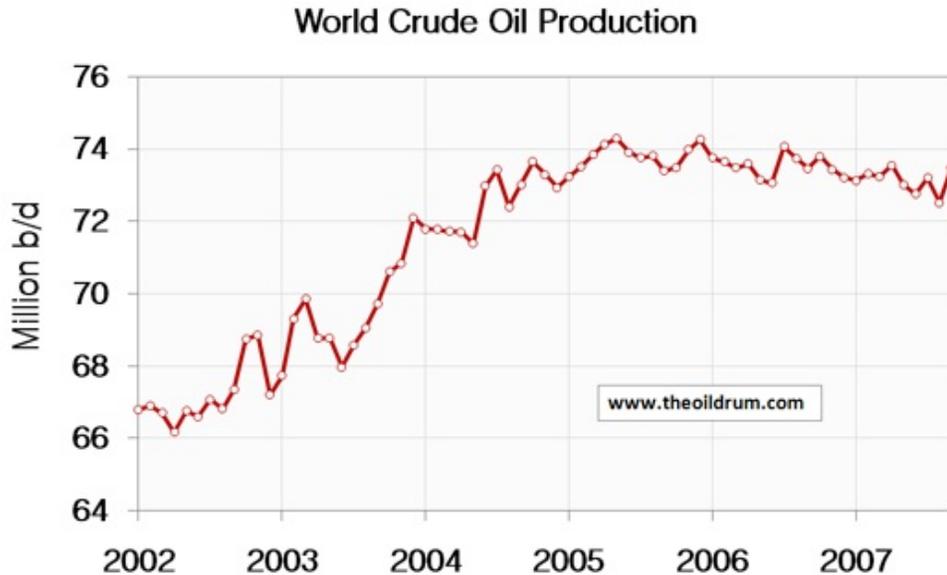


Euan's conceptual forecast for Saudi. Are the days of plenty reaching an end?

In September the ASPO International Conference took place at Cork in Ireland. Unlike previous meetings this edition had a high number of presentations from the Industry, still the audience didn't note that much of a difference in the forecasts. Peak Oil is a fact of Nature, there's no use avoiding it. Heading Out reported the conference: [Introduction](#), [First Morning](#), [First Afternoon](#), [Second Morning](#) and [Second Afternoon](#). On this last session the audience assisted to an inflamed declaration by Michael Meacher against corporate interest interfering with government action – a [Disruption of Democracy](#) he called it - that is avoiding the proper action in face of the current energy crisis.

During the second day of conference, the US Federal Reserve cut interest rates by half percent sending the WTI to a record 84 \$/barrel. The markets were in turmoil, perceiving that the credit crunch had deep ramifications and that there wasn't much the Fed could do about the dollar.

By the end of September TOD people started realizing that the May 2005 Crude Oil peak was then standing for more than two years. Was it time to start referring to Peak Oil in the past tense? [Some thought so](#) and with the help of a favourable price environment a [“peak is here”](#) hype set in.

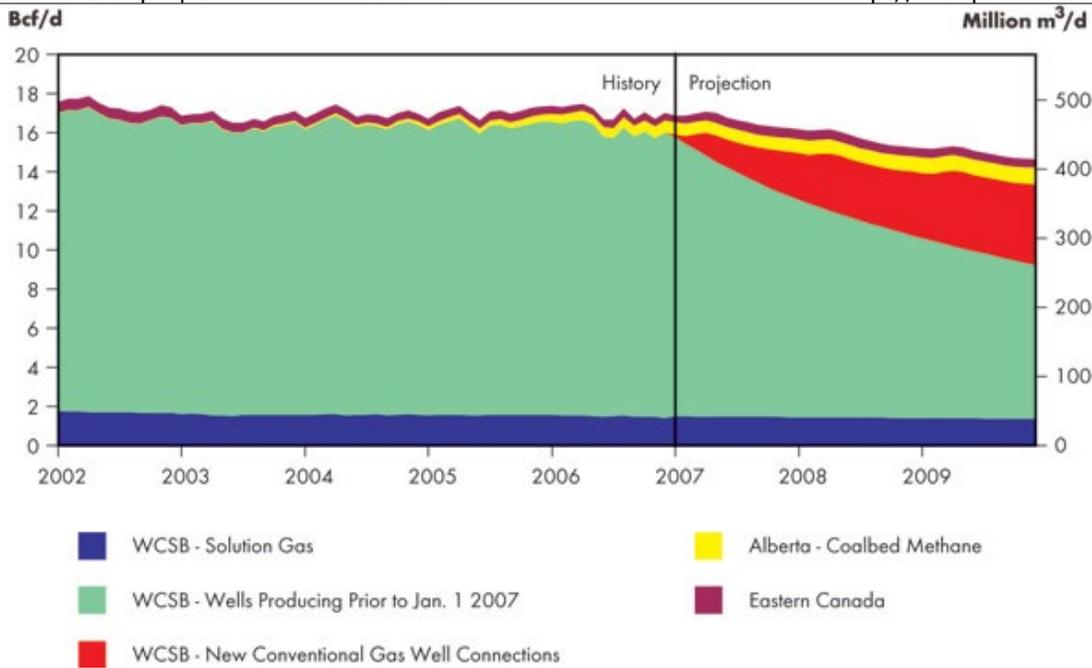


By September the May 2005 Crude Peak was looking really far away.

The scene was set for an ["interesting"](#) October, as T. Boone Pickens called it. Oil prices went on a cavalcade - towards where, few ventured to forecast - WTI crossed [86 \\$/barrel](#), then demolished the [90 \\$/barrel](#) barrier and continued to reach beyond [93 \\$/barrel](#). [Some called it speculation](#), but there it was, the Oil Shock.

In October the ASPO-USA conference took place, another international gathering that takes place in the other side of the Atlantic. The conference brought some dismay and some hope regarding a problem whose dimension ["defeats most imaginations"](#). Heading Out was once again the TOD reporter with the following notes: [Workshop Day](#), [Day 1 part 1](#), [Day 1 part 2](#), [Day 2 part 1](#) and [Day 2 part 2](#).

Two other events occurred in October deserve attention. Libelle reported that [Natural Gas had entered the decline phase in Canada](#), meaning that all three countries in North America (Canada, US and Mexico) are now declining. Most of the TOD followship/fellowship comes from North America and Europe, for them Natural Gas is posited to create larger personal problems than Oil.

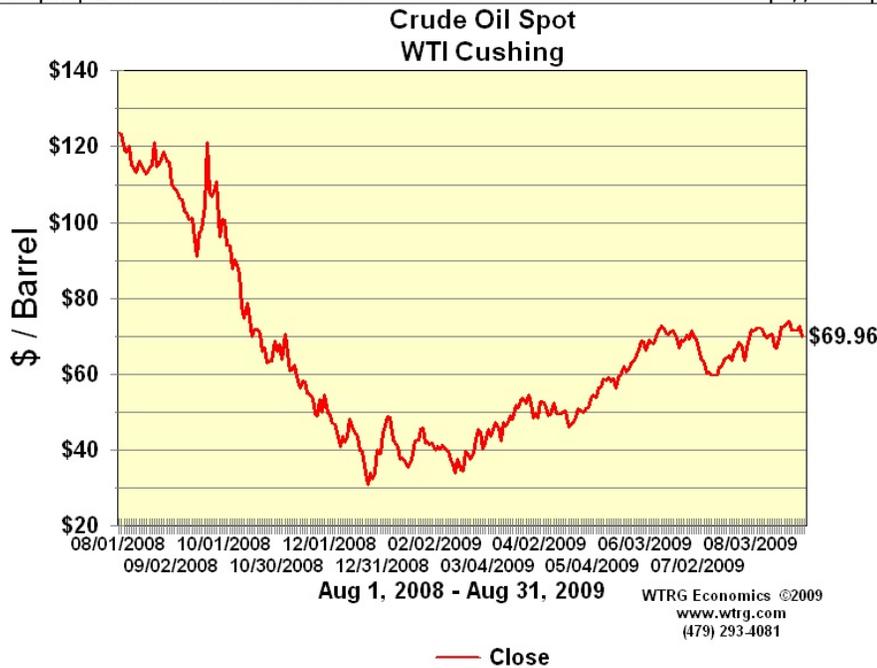


Canada's Gas: the decline sets in.

And also in October the TOD community welcomed the launching of its first ship in the Southern Hemisphere, with [TOD Australia/New Zealand](#) coming afloat.

November would witness times of great anxiety with the WTI index getting ever closer to 100 \$/barrel. [The Tapis index would go through 100 \\$/barrel](#) several times and Brent would cross above 96 \$/barrel once or twice. Days after another rate cut by the Federal Reserve, the WTI would go above 99.5 \$/barrel in spot trading, but still no cigar.

100 \$/barrel is just a magic number without any physical meaning, even so when referring to an index that is today but a regional token like the WTI. But for the TOD community it meant front page headlines the following day, that might - just might - put some forces of change at work. Maybe next time. Another piece of the puzzle was [the dollar weakness](#), that although couldn't explain entirely the oil cavalcade, put it in a completely different perspective. The US\$ fell 13% in just ten months and got some oil exporting countries wondering what to do with all those green tickets they have accumulating in recent years. December would see the dollar rallying somewhat but without leaving a very uncomfortable situation.

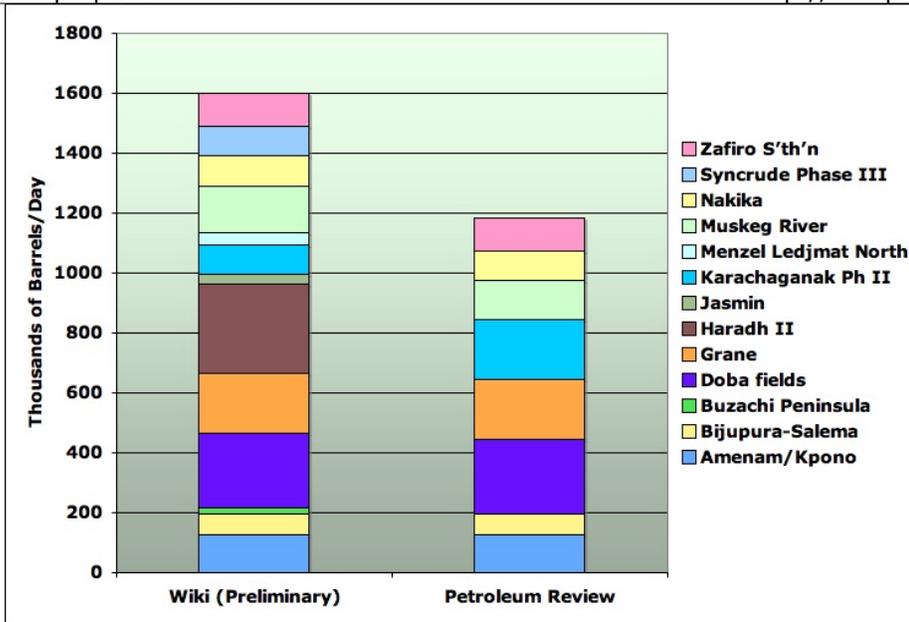


WTI throughout 2007.

Even without getting to the psychological three digits, Oil was indeed hitting the news. Especially in the US media, articles poured that hinted at geological constraints being the cause behind high prices. Notably, [the History Channel aired a documentary on Peak Oil](#), and when petrol crossed north of one sterling per litre in the UK, [ITV had a short piece on the subject](#). There were direct addresses by some industry headmen and Fatih Birol, the IEA's chief economist, [started to show some concern](#).

All this media attention would fade away when Petrobras announced it had found an 8 Gb oil and gas field off Brasil. [Tupi](#) was the name, and unlike Jack in 2006, this announcement had a bit more juice to it, it could be the first of a series of finds in a new, up to recently unknown, oil province. There's a 2000 metre salt layer to overcome that could prevent commercial exploration, but still a remarkable find. Even with Tupi and without media attention, 90\$ oil was here to stay.

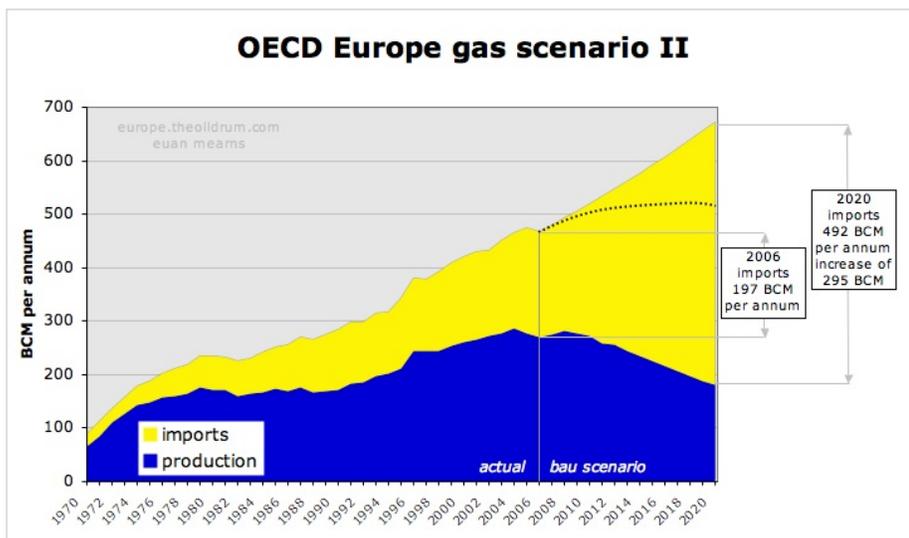
By the end of November TOD (led by Stuart, Khebab and Ace) embarked on a new project to build a [Megaproject database](#). The project is being developed using Wikipedia with everyone invited to join in and fill the gaps. This collaborative project promises to be of great value, both for the TOD community as for other researchers performing what is usually called the bottom up analysis. Hopefully 2008 will see the fruits of this effort.



The Megaproject Megaproject.

December saw the first days of cold in Europe and North America after a mild early Fall. As energy consumption stepped up, so did the IEA's warnings of an impending energy crisis. Aad van Bohemen, the IEA's Director of Crisis Management, explicitly warned on a Dutch TV channel that [supply wasn't keeping up with demand](#). And when presented the [2007 World Energy Outlook](#), Fatih Birol, even if avoiding sharp words, showed a clear sense of urgency.

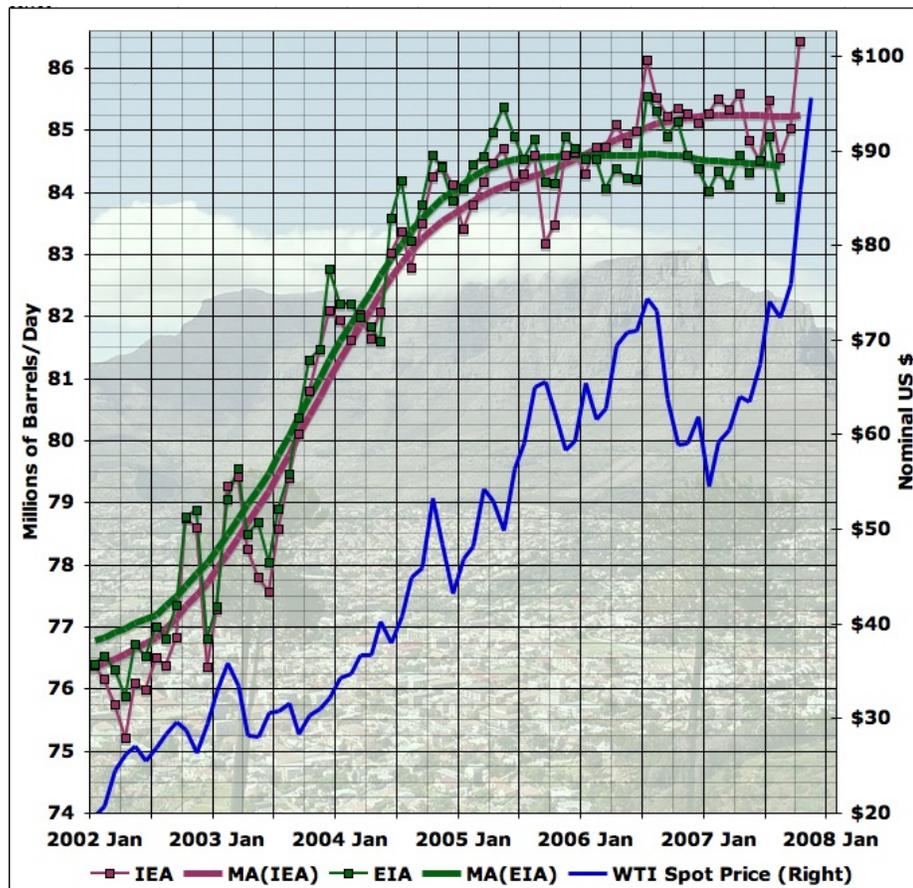
Natural Gas got some [deserved attention](#) by this time. On both sides of the Atlantic the access to this scarce resource is much more concerning than to oil. Awareness has to be built about this problem, if possible before it's too late. Euan, with the precious help of Jean Laherrère, finally finished an opus on the [European Gas Market](#) that showed a really bleak picture. The innocent question "[Daddy will lights be on at Christmas?](#)" might seem displaced today, but may make some sense one of these winters.



Daddy doesn't exactly know how to fill that gap.

The year ends with two other noteworthy events. First, wheat broke above the psychological

barrier of 10 \$/bushel, showing the [implications of an energy scarce world for food production](#). And then the early oil production numbers for the third quarter were strongly hinting at [new all time records for Crude and All Liquids in October](#) and maybe November. Certainties about these numbers will come only in 2008, but for now, Peak Oil still seems to be a future event.



Perhaps the work at TOD has to endure a few more years.

2008 is presenting itself as a very uncertain year. Both energy scarcity and the credit crunch are menacing to spread to other sectors of the Economy, affecting it in opposite ways. Will 2008 be the year that Oil crossed sustainably above 100 \$/barrel? Or the year oil prices dived due to a worldwide recession? That's the [question to answer](#). Factoring in the dollar's secular downward trend, forecasting oil prices or price ranges seems more difficult than ever (as I write this lines, both Tapis and Louisiana Sweet have been intermitently crossing 100 \$/barrel amidst another dollar dive) Besides all this, Natural Gas could have some bad surprises reserved for 2008.

TOD's audience grew visibly in 2007. The year started off with 230 K visits in January, but topped 400 K already in March in consequence of the Saudi roll. It took some time to repeat that number but monthly visits kept above 350 K from then on. Thanks to high oil prices and a steady stream of top quality articles and news reporting, TOD topped 500 K visits both in October and November. The satellite sites grew even faster during this period, also reflecting a growing and enhancing community.

Before the final good bye to 2007, it must be said that none of this would have been possible without TOD's Captain (now more like Commodore) - Prof. Goose - and First Mate - Super G. The TOD community is forever indebted to them.

May 2008 fulfil your hopes and expectations.

Luís de Sousa
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