



# Peak Oil News

## A Compilation of New Developments, Analysis, and Web Postings

[Tom Whipple](#), Editor

Thursday, December 04, 2008

### Current Developments

#### [1. OIL DOWN TO \\$46 AFTER NEARLY FOUR-YEAR LOW](#)

By Jane Merriman

Thu Dec 4, 2008 6:49am EST

LONDON (Reuters) - Oil pared some losses on Thursday after an early fall below \$46 a barrel to its lowest in nearly four years, in response to the bleak outlook for the world economy and oil demand. Oil prices have dropped more than \$100 a barrel from an all-time high of \$147.27 hit in July. U.S. light crude for January delivery was down 64 cents to \$46.15 a barrel by 1139 GMT (6:39 a.m. EST). It earlier touched a low of \$45.30, the lowest since February 9, 2005. London Brent crude was down 61 cents at \$44.83. Oil's fall since July has echoed the global economy's slide toward recession and tracked global stock market trends. "With the oil market looking at equity markets for guidance, you need these to stabilize first before the oil market itself can recover," said Harry Tchilinguirian, analyst at BNP Paribas. "Most days, you look at S&P futures (U.S. equity futures) in the morning and you get a hint of what crude futures will do," he said.

#### [2. CRUDE OIL FALLS A FIFTH DAY AS U.S. FUEL DEMAND DROPS FURTHER](#)

By Christian Schmollinger and Grant Smith

Dec. 4 (Bloomberg) -- Crude oil fell for a fifth day to the lowest in almost four years after a report showed U.S. fuel demand extended declines because of the country's deepening economic slump. The average amount of fuel products such as gasoline and diesel supplied by refiners for the past four weeks was 7.9 percent less than a year earlier, according to a U.S. Energy Department report yesterday. The U.S. Labor Department will probably say tomorrow that payrolls fell the most since the 2001 terrorist attacks last month. "The macroeconomic picture is bleak, the engine of capitalism is stuck right now," Stephen Schork, president of the Schork Group, said in a radio interview from Vienna. "There's no reason why crude oil can't go below \$40 in the next six months." Crude oil for January delivery today dropped as much as \$1.49, or 3.2 percent, to \$45.30 a barrel on the New York Mercantile Exchange. That's the lowest since Feb. 9, 2005. It was at \$46.11 a barrel at 11:45 a.m. London time.

#### [3. PERSIAN GULF TANKER RATES MAY SURGE AS STORAGE CURTAILS FLEET](#)

By Alaric Nightingale

Dec. 3 (Bloomberg) -- The cost of shipping Middle East crude to Asia may surge on accelerated bookings in anticipation of profit from higher oil prices in the future. As many as 12 supertankers, each designed to hold 2 million barrels of oil, and four vessels half the size are booked with options to use them as storage, Johnny Plumbe, chief executive officer of London-based broker ACM Shipping Group Plc, said by phone today. February contracts for West Texas Intermediate oil, a global benchmark, are trading about 3 percent higher than January contracts. The "market is on fire," because of "storage caused by the low oil prices," said Nikos Varvaropoulos, an official at Optima Shipbrokers in Athens. That's cut supply and may have boosted the price an oil company paid by 20 percent compared with yesterday's single-voyage, or spot, rental rate, he said. Slumping demand for crude oil has created a pricing structure where futures

prices are more than those for more- immediate purchase. That compensates traders who can afford to store barrels and sell them at higher prices in the future.

#### **4. AGREEMENT TO EXPORT OIL FROM KURDISH FIELDS COLLAPSES**

By Nidhal al-Laithi  
Azzaman  
04 December 2008

An agreement to allow Kurds to export up to 100,000 barrels of oil a day via national pipelines has collapsed, Oil Ministry officials said. The officials, speaking on condition of anonymity, said differences over collection of royalties and the Kurdish region's right to strike oil deals on its own led to the collapse of the deal. Oil Minister Hussain al-Shahristani and Kurdish Region Prime Minister Nejervan Barzani agreed last month on the export of oil produced from fields within the Kurdish enclave. The Kurds want to have a say in the foreign cash in return of exporting oil produced in their region and also have the sole responsibility in developing oil fields. Shahristani has turned down both requests, saying the collection of royalties and signing of contracts must be the prerogative of the central government. Disparate Arab political factions, both Shiite and Sunni, are said to have united behind Shahristani.

#### **5. IRAQIS FIND DIALOGUE ON OIL ISSUES IN LONDON**

Iraq Oil Report  
December 3, 2008

A conference to connect Iraq oil officials and the international oil industry instead created a space for intra-Iraqi dialogue on key disputes and sticking points holding back Iraq's oil sector. While Iraq this summer saw record post invasion oil production and exports — with the extra bonus of record oil prices — oil flow has slowed recently (minus the slight October boost). Iraq's producing fields are in need of modern technology, its more than capable workers modern training, and the wells repaired — a consequence of wars under Saddam Hussein (among other of his policies) and the resulting U.N. sanctions. Without the much hyped proposed new oil law, Iraq still can make major advances. Spending the money is the problem, with many skilled technocrats retired, leaving the violence or becoming a victim to it. Also to blame are Saddam-era institutionalized thinking and post-2003 American made bureaucracies with less of the capacity that an occupied government should possess.

#### **6. IRAN CONFRONTS AN 'ECONOMIC EVOLUTION'**

Ahmadinejad's Plan to Curb Government Subsidies Threatens to Alienate Recipients

By Thomas Erdbrink  
Washington Post Foreign Service  
Thursday, December 4, 2008; A10

TEHRAN, Dec. 3 -- Gasoline? It's 36 cents a gallon. Laundry detergent? Fifty cents for a standard-size box. Milk? About 20 cents a quart. These prices are so low because Iran's government spends half its national budget to subsidize many of life's necessities. Not for long. President Mahmoud Ahmadinejad has launched a sweeping economic restructuring plan that would end many of these subsidies within a couple of months. To blunt the blow of gasoline prices quadrupling and similar increases for other goods, he also proposes to give as much as \$70 a month to poor Iranians. Ahmadinejad, a populist leader with a working-class background who came to power three years ago, is staking his political future on his ambitious plan, which threatens to alienate Iranians who have benefited from the subsidies. Known abroad for incendiary rhetoric and his defense of Iran's nuclear program, Ahmadinejad's domestic political standing relies more on his largely unfulfilled promises to use Iran's oil wealth to improve the lives of poor people.

#### **7. CHINA, INDIA WANT MORE COMMITMENT FROM OBAMA ON CLIMATE CHANGE**

By Alex Morales

Dec. 4 (Bloomberg) -- China and India, the developing nations with the highest carbon-dioxide emissions, want U.S. President-elect Barack Obama to demonstrate more commitment in tackling climate change,

delegates at United Nations talks in Poland said. Obama has pledged to bring U.S. output of greenhouse-gas emissions back to 1990 levels by 2020. That's still above the limit the world's biggest economy would have been required to meet by 2012 under the Kyoto Protocol, a global warming treaty the U.S. never ratified. It's also short of a European Union pledge to cut the gases 20 percent from 1990 levels by 2020. "We don't think it's ambitious enough," Su Wei, China's lead negotiator at the Dec. 1-12 climate-change talks in Poznan, Poland, said late yesterday in an interview. "We hope there will be movement." Delegates from 190 nations have gathered in Poznan, halfway between Warsaw and Berlin, at the midpoint of a two-year negotiation that aims to produce a treaty to fight global warming in Copenhagen next December. Analysts say agreement between China and the U.S. is crucial to the success of the talks.

## **8. GM, CHRYSLER CONSIDERING BANKRUPTCY TO GET BAILOUT**

Thu Dec 4, 2008 5:35am EST

(Reuters) - General Motors Corp and Chrysler LLC are considering accepting a pre-arranged bankruptcy as the last-resort price of getting a multi-billion dollar government bailout, Bloomberg reported, citing a person familiar with internal discussions. In response to automakers' bailout plea, staff for three members of Congress have asked restructuring experts if a pre-arranged bankruptcy -- negotiated with workers, creditors and lenders -- could be used to reorganize the sector without liquidation, Bloomberg said. General Motors and Chrysler could not be immediately reached for comment by Reuters. Industry executives and analysts say the immediate carnage from a bankruptcy of General Motors Corp, Ford Motor Co or Chrysler would spread throughout an industry that is bleeding cash in a global slowdown. All three automakers have urged Congress to authorize \$34 billion in loans and credit lines, saying they will restructure, and cut models, jobs and executive pay to remain viable.

## **9. DETROIT DEMISE WOULD HIT, NOT HELP, ASIAN RIVALS**

By Chang-Ran Kim, Asia autos correspondent - Analysis  
Wed Dec 3, 2008 10:41pm EST

TOKYO (Reuters) - Asia's top automakers would not welcome the collapse of one or even all of their three big Detroit rivals, though the likes of Toyota Motor Corp, Honda Motor Co Ltd and Hyundai Motor Co would expect to gain sales in the long term. Industry executives and analysts say the immediate carnage from a bankruptcy of General Motors Corp, Ford Motor Co or Chrysler LLC would spread throughout an industry that is bleeding cash in a global slowdown. "If all the Big Three were to fail, the consequences of that are beyond imagination. I think it would upset the very foundation of the U.S. economy," Suzuki Motor Corp CEO Osamu Suzuki warned last week. GM, Ford and Chrysler have urged Congress this week to authorize \$34 billion in loans and credit lines, saying they will restructure, and cut models, jobs and executive pay to remain viable. Suzuki's peers agree, maybe reluctantly, that a multi-billion dollar U.S. bailout is inevitable.

## **10. U.S. ECONOMIC STIMULUS PLAN TIED TO ENERGY SAVINGS**

By John M. Broder  
NY Times  
Thursday, December 4, 2008

WASHINGTON: President-elect Barack Obama and leaders in Congress are fashioning a plan to pour billions of dollars into a jobs program to jolt the economy and lay the groundwork for a more energy-efficient one. The details and cost of the so-called green-jobs program are still unclear, but a senior Obama aide, speaking on the condition of anonymity to discuss a work in progress, said it would probably include the weatherizing of hundreds of thousands of homes, the installation of "smart meters" to monitor and reduce home energy use, and billions of dollars in grants to state and local governments for mass transit and infrastructure projects. The green component of the much larger stimulus plan would cost at least \$15 billion a year, and perhaps considerably more, depending on how the projects were defined, aides working on the package said.

## **11. MMS: 14.9% OIL, 20.9% GAS OUTPUT STILL OFF LINE IN US GULF**

HOUSTON (Dow Jones)--Output of crude oil and natural gas from the Gulf of Mexico increased from two weeks ago, as energy companies worked to restore production that was shut in by Hurricane Ike, the U.S.

Minerals Management Service said Wednesday. The agency reported that 14.9% of crude oil, or 193,910 barrels a day, remained shut in. The agency did not report figures last week but on Nov. 19 reported that 16.3% of oil was still off line. The production figures are estimates based on reports of what operators expect their output to be, MMS said. Natural gas output of 1.544 billion cubic feet a day, or 20.9%, also remained off line. On Nov. 19, the agency reported that 24.4% of gas was still off line. The Gulf of Mexico produces about 1.3 million barrels of oil a day and about 7.4 Bcf of natural gas, the MMS said.

## **12. RIG COUNT MUST DROP TO REVIVE GAS MARKET, XTO SAYS**

By Dan Lonkevich

Dec. 3 (Bloomberg) -- Natural-gas producers must shut down more drilling rigs to stem a decline in prices for the fuel, XTO Energy Inc. Chief Executive Officer Keith Hutton said. There were 1,443 rigs drilling for gas as of Nov. 28, a drop of 10 percent from 1,606 on Sept. 12, according to data from Baker Hughes Inc., the world's third-largest oilfield-services provider. "I think you'll see it drop to 1,200 rigs," Hutton said in an interview today. "Then you won't be able to grow production, and prices will have to rise." Natural-gas futures traded in New York have fallen 54 percent since touching \$13.694 per million British thermal units on July 2, the highest since December 2005. The January futures contract settled at \$6.347 today on the New York Mercantile Exchange.

## **13. OIL-PRICE DROP FORCES BIG ENERGY TO RETREAT**

By Stephen Gandel

Time Magazine

Wednesday, Dec. 03, 2008

Shortly after the 6 a.m. shift change, drilling crews start pouring into the Base Camp Café in Rifle, Colo. Business has been booming at the diner for much of the past few years as rising energy prices have increased exploration activity at the nearby natural-gas-rich Piceance Basin. Four years ago, the café moved to a new, 100-seat location to accommodate the crowds. But lately, the wait for the café's signature Packer breakfast sandwich, which is two eggs and sausage covered in gravy on a biscuit, has been shorter than usual. On a recent Tuesday morning at 7 a.m., the restaurant was only a quarter full. "One of the drilling crews just got laid off," says waitress Theresa Steffen. "It's slowed down a little."

## **14. DISAPPOINTMENT WITH OIL SANDS UPGRADER PROBLEMS**

Jonathan Ratner

FP Trading Desk

Two oil sands upgraders – one belonging to Shell Canada Ltd. and the other to Suncor Energy Inc. – are on the fritz in Alberta right now, and at least one brokerage house is voicing its disappointment. One of Suncor's two upgraders near Fort McMurray will undergo three to four weeks repair after a Nov. 26 fire. The blaze, which was quickly extinguished, took place as Suncor restarted the facility after it had been shut down for planned maintenance. One of the upgraders will operate at reduced rates, prompting UBS Securities to chop its 2009 production estimate to 277,000 barrels per day, down from 285,000 barrels per day, and its 2008 estimate down to 226,382 barrels per day. "Suncor's reliability and execution has suffered throughout 2008 resulting in a derating of the company's once premium valuation. This latest fire certainly doesn't help the company's credibility," UBS said in a report. "For Suncor to regain its premium valuation the market will need to see vastly improved execution and reliability."

## **15. NORWEGIAN PROJECTS AT RISK BY LOW OIL PRICES, FINANSVISEN SAYS**

By Meera Bhatia

Dec. 4 (Bloomberg) -- New projects and planned exploration on the Norwegian shelf may be postponed should oil prices remain below \$50 a barrel, Finansavisen reported, citing Director General Bente Nyland at the Norwegian Petroleum Directorate. Falling oil prices, rising costs and the global credit crisis may make new projects unprofitable, Nyland told the Oslo-based newspaper. Investments for 2009 will probably not be affected since these are already set, she said, according to the newspaper. If projects would be stopped production could be affected four to five years later, the newspaper reported.

## Discussion and Analysis

### 16. THE IEA WEO 2008: LONG TERM PROSPECTS FOR COAL PRODUCTION

Posted by [Rembrandt](#)

The Oil Drum

December 4, 2008 - 2:24am



**A common day in the life of a Chinese coal truck driver  
The traffic jam of solely coal trucks  
on the highway from Mongolia to Beijing**

**Photo courtesy of Eefje Aarnoudse**

scenario.

The International Energy Agency expects coal production to nearly double by 2030 in their World Energy Outlook 2008 if no large scale governmental intervention occurs. In this post, I analyse the likelihood of this happening from the perspective of available coal reserves. My conclusions are that if we look at a global level, taking coal reserve data at face value, the global IEA reference scenario for coal production to 2030 is possible. However, when focusing on China, the country that now produces 41% of all coal, the scenario is unlikely to occur because China possesses insufficient coal reserves to sustain production to 2030 at the level expected by the IEA. Only in a highly optimistic case, if China's coal reserves are more than double those currently known, will China be able to sustain coal production as expected in the IEA reference

### 17. THE 2008 IEA WEO - RENEWABLE ENERGY

Posted by [Robert Rapier](#)

The Oil Drum

December 3, 2008 - 9:16am

As I read through the 2008 International Energy Agency (IEA) World Energy Outlook, I had the distinct impression that I was reading contributions from people with completely opposite points of view. The pessimist warned that we are facing a supply crunch and much higher prices. The optimist in the report said that oil production won't peak before 2030. This trend held in the section on renewable energy. The optimist noted that renewable energy is expected to "expand rapidly." The pessimist noted that biofuels are predicted to only supply 5% of our road transport fuel in 2030. And so the report goes, part rampant optimism and part rampant pessimism. I guess the good news then is that there is something in there that will appeal to everyone, regardless of your outlook. The bad news? The claims that are directly opposed to your views will have you questioning the credibility of the report. And if you are like me--and note that between last year's report and this year's report they dropped their 2030 oil demand forecast by 10 million bpd--you are left wondering whether there is any credibility at all in forecasts that far out.

## **18. OIL BECOMING THE REALM OF DESPOTS**

Claudia Cattaneo  
Financial Post  
Wednesday, December 03, 2008

Petroleum Intelligence Weekly's annual list of the world's Top 50 oil companies confirms an alarming trend: The world's petroleum riches are sliding further into the hands of state-owned oil companies, with Russian and Chinese companies making the biggest gains in the past year, while publicly traded Western oil companies are fighting for a shrinking pie. Among the key findings released this week: For all the talk about Canada's huge oil sands reserves and their potential, only two Canadian companies, EnCana Corp. and Canadian Natural Resources Ltd., made the elite list, ranking 34th and 39th, respectively, behind even such government-owned lightweights as Colombia's Ecopetrol and Uzbekistan's Uzbekneftegas.

## **19. ECONOMISTS WITHOUT A CLUE**

By Richard Heinberg  
Post Carbon Institute

Prepare to observe the spectacle of the two great economic paradigms of the twentieth century crashing to the ground, locked in mortal combat. A hundred years past, markets ruled freely: fortunes were made, workers abused, bubbles blown. According to the Austrian School of economists, led by Ludwig von Mises, this was all as it should be: despite any temporary pain or inconvenience, the unfettered market always knows best how to allocate goods and organize investment and labor. But the ensuing pain and inconvenience were just too much for the various stripes of Marxists and socialists, some of whom led a revolution in Russia to establish the first state-controlled, planned economy. The catastrophes of the Great War and the Great Depression led to the ascendancy of John Maynard Keynes, the British economist who argued that even capitalist economies needed regulation and controls in order to avoid excessive manias and subsequent implosions.

## **20. PIPE DREAMS**

Despite forecasting an oil supply crunch and soaring prices, industry watchdogs are sticking to the line that production can go on rising

David Strahan  
The Guardian,  
Wednesday December 3 2008

You can imagine the internal contortions when an old friend was once memorably described as a 60s liberal with Catholic guilt. I got the same impression of grinding gears while reading the International Energy Agency's latest long-term forecast, the World Energy Outlook 2008, published last month. In many respects, the IEA's analysis of threats to the oil supply is bloodcurdling, and yet the agency maintains that global production can keep rising for at least two decades. The rich nations' energy watchdog is clearly alarmed, but seems afraid of its own bark. The IEA's annual forecast has become steadily darker in recent years, but this time the deterioration in its outlook is dramatic. Only a year ago, the agency was predicting that global oil production in 2030 would reach 116m barrels per day, up from around 84mb/d, but now it has slashed that to 106mb/d.

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### 1. OIL DOWN TO \$46 AFTER NEARLY FOUR-YEAR LOW

By Jane Merriman  
Thu Dec 4, 2008 6:49am EST

LONDON (Reuters) - Oil pared some losses on Thursday after an early fall below \$46 a barrel to its lowest in nearly four years, in response to the bleak outlook for the world economy and oil demand.

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London Brent crude was down 61 cents at \$44.83.

Oil's fall since July has echoed the global economy's slide toward recession and tracked global stock market trends.

"With the oil market looking at equity markets for guidance, you need these to stabilize first before the oil market itself can recover," said Harry Tchilinguirian, analyst at BNP Paribas.

"Most days, you look at S&P futures (U.S. equity futures) in the morning and you get a hint of what crude futures will do," he said.

He said supply/demand factors such as OPEC supply cuts and winter demand did not appear to be on the agenda at the moment.

European central banks are expected to cut interest rates on Thursday to try to restore some vitality to their feeble economies. [nHKG108699]

Sweden's central bank has cut by a record 175 basis points, prompting speculation of dramatic cuts elsewhere.

Oil producer group OPEC will consider another round of output curbs to try to defend prices when it next meets on December 17 in Algeria.

"For sure we will cut in Oran (Algeria)," Qatar's oil minister Abdullah al-Attiya said on Wednesday.

Oil rose briefly on Wednesday when U.S. Energy Information Administration data revealed an unexpected fall in fuel inventories last week in the world's top energy consumer.

Crude stocks, for example, fell 400,000 barrels in the week to November 28, against an expected 1.7 million barrels build.

Stocks of gasoline and distillates, which include heating oil, also showed surprise falls.

But U.S. refinery utilization fell 1.9 percentage points to 84.3 percent of capacity against a predicted rise of 0.2 percentage point, pointing to weak demand.

"Refiners began to cut processing rates significantly," Jan Stuart, economist in New York for UBS, said in a report.

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"The macroeconomic picture is bleak, the engine of capitalism is stuck right now," Stephen Schork, president of the Schork Group, said in a radio interview from Vienna. "There's no reason why crude oil can't go below \$40 in the next six months."

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Futures have tumbled 69 percent after reaching a record \$147.27 on July 11.

'Risk Aversion'

"Nothing except a major shock is going to revive this market as long as risk aversion predominates," said Andrey Kryuchenkov, an analyst with VTB Group in London. "Demand numbers were down again yesterday, reflecting the economic crisis."

The four-week average of petroleum products supplied in the U.S. was 19.3 million barrels a day, down from 20.9 million barrels a day a year ago, the Energy Department report showed.

Refineries operated at 84.3 percent of capacity, down 1.8 percentage points from the week before. It was the biggest one-week drop since September, when hurricanes Gustav and Ike struck the Gulf Coast.

The U.S. entered a recession in December 2007, the National Bureau of Economic Research, a private, non-profit panel of economists that dates American business cycles, said on Dec. 1.

Crude-oil supplies fell 456,000 barrels to 320.4 million barrels last week, the first decline in 10 weeks, the department said. Inventories were forecast to rise 1 million barrels, according to the median of 13 responses in a Bloomberg survey.

Supplies at Cushing, Oklahoma, where New York-traded West Texas Intermediate oil is stored, climbed 2.35 million barrels to 22.9 million last week. The increase left inventories at their highest since June 2007.

The price difference between gasoline futures and oil contracts, known as the crack spread and seen as a profit margin for refiners, was at minus \$3.07 a barrel. The crack has been negative for almost two months, reducing the incentive to process fuels.

Widening Recession

Gasoline stockpiles dropped 1.53 million barrels to 198.9 million in the week ended Nov. 28. Supplies of distillate fuel, a category that includes heating oil and diesel, fell 1.72 million barrels to 125 million last week.

Brent crude oil for January settlement fell as much as \$1.64, or 3.6 percent, to \$43.80 a barrel on London's ICE Futures Europe exchange, and traded at \$44.79 at 11:21 a.m. London time.

Oil prices have dropped as the U.S., Japan and Europe are all in recession for the first time since World War II.

The Labor Department's November jobs report may show payrolls fell by 330,000, the biggest decrease since 2001, according to a Bloomberg News survey of economists.

"I do think this non-farm payrolls data will be quite important to the market," said David Moore, a commodity strategist with Commonwealth Bank of Australia Ltd. in Sydney. "I'm sure some of it's factored into the market but the actual printing of the number might still cause people to worry about oil consumption in the U.S."

The report will be released at 9:30 a.m. local time tomorrow in Washington D.C.

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Slumping demand for crude oil has created a pricing structure where futures prices are more than those for more-immediate purchase. That compensates traders who can afford to store barrels and sell them at higher prices in the future.

"This is a situation that only happens when oil price is in the situation where it is now," said Plumbe, whose company specializes in tanker rentals and sales. "If you take enough ships out on storage, it's going to affect supply and demand."

Frontline Ltd., the world's largest owner of very large crude carriers, or VLCCs, said Nov. 28 it leased out two vessels for storage and was working on a third such transaction. Crude oil prices in six months time are anticipated to be as much as \$8 a barrel more than supplies for more immediate delivery, it said.

#### Rates Rise

Rates for VLCC shipments to the U.S. from West Africa gained 19 percent to 109.62 Worldscale points on Dec. 2, according to the London-based Baltic Exchange. They advanced at the fastest pace in at least nine-and-a-half years on Dec. 1.

There was speculation that one booking was concluded at 75 Worldscale points, Varvaropoulos said, adding that no details of the transaction have emerged. The Baltic's rate for Saudi Arabian cargoes to Japan gained 0.6 percent to 62.73 Worldscale points.

Halvor Ellefsen, a broker at Sealeague AS in Oslo, said there was speculation about a booking at more than 70 points.

Worldscale points are a percentage of a nominal rate, or flat rate, for more than 320,000 specific routes. Flat rates for every voyage, quoted in U.S. dollars a ton, are revised annually by the Worldscale Association in London to reflect changing fuel costs, port tariffs and exchange rates.

Each flat rate assessment gives owners and oil companies a starting point for negotiating hire rates without having to calculate the value of each deal from scratch.

A rate of 62.73 works out at \$39,497 a day, according to the Baltic Exchange. Globally the carriers are making \$35,072 a day. Frontline said Nov. 24 it needs \$34,700 a day to break even on each of its supertankers, a 10 percent gain from Aug. 21.

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Azzaman  
04 December 2008

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The officials, speaking on condition of anonymity, said differences over collection of royalties and the Kurdish region's right to strike oil deals on its own led to the collapse of the deal.

Oil Minister Hussain al-Shahristani and Kurdish Region Prime Minister Nejjervan Barzani agreed last month on the export of oil produced from fields within the Kurdish enclave.

The Kurds want to have a say in the foreign cash in return of exporting oil produced in their region and also have the sole responsibility in developing oil fields.

Shahristani has turned down both requests, saying the collection of royalties and signing of contracts must be the prerogative of the central government.

Disparate Arab political factions, both Shiite and Sunni, are said to have united behind Shahristani.

In a press conference, Barzani lashed out at Shahristani for recent comments that Kurds must rescind the deals they have signed with foreign firms.

Barzani said those deals would not be revoked and that the Kurds were determined to export oil on their own.

It is not clear how the Kurds could do that as countries neighboring their region – Syria, Iran and Turkey – have said they would not let the Kurds do so without central government approval.

The twin-pipeline carrying Iraqi crude to Turkish terminals on the Mediterranean passes through Kurdish territory but the Kurds cannot disrupt Iraqi exports of nearly 400,000 barrels via that pipeline.

Kurds now get 17% of foreign cash Iraq earns on its oil exports.

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## 5. IRAQIS FIND DIALOGUE ON OIL ISSUES IN LONDON

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December 3, 2008

A conference to connect Iraq oil officials and the international oil industry instead created a space for intra-Iraqi dialogue on key disputes and sticking points holding back Iraq's oil sector.

While Iraq this summer saw record post invasion oil production and exports — with the extra bonus of record oil prices — oil flow has slowed recently (minus the slight October boost).

Iraq's producing fields are in need of modern technology, its more than capable workers modern training, and the wells repaired – a consequence of wars under Saddam Hussein (among other of his policies) and the resulting U.N. sanctions.

Without the much hyped proposed new oil law, Iraq still can make major advances. Spending the money is the problem, with many skilled technocrats retired, leaving the violence or becoming a victim to it. Also to blame are Saddam-era institutionalized thinking and post-2003 American made bureaucracies with less of the capacity that an occupied government should possess.

Regardless, a quick and tough fix is needed, especially with the lower than budgeted for oil prices. "Mussab Hassan Al-Dujayli, head of crude marketing at Iraq's State Oil Marketing Organization, said he expects Iraq's crude exports next year to fall to a level of 1.65 million to 1.8 million barrels a day, down

from an average of 1.8 million to 1.9 million barrels a day in 2008," Spencer Swartz reports for the Wall Street Journal. "Exports will fall. We simply have maintenance problems that will not go away," Mr. Al-Dujayli said."

Iraq's 2009 budget has been revised three times, downed total 16 percent, and possible cuts continuing. Finance Minister Bayan Jabr told Mohammed Abbas and Waleed Ibrahim of Reuters in Baghdad he's pressing Iraq's Oil Ministry to boost oil exports to 2.5 million barrels per day to make up for the shortfall in a budget dependent on oil sales. (Also read an interview of the minister with Sa'ad Salloum of Niqash.)

Dujayli told Iraq Oil Report he thinks low oil prices will stimulate demand in the long run, which benefits Iraq since the currently producing fields have much more to show, and there's huge potential in the vast discovered but untouched fields and the majority of the country underexplored.

Often during the conference, which took place in London organized by The CWC Group, the question and answer period of Iraqi panelists turned into debates on key issues with Iraqis in the audience.

This isn't lost on Iraq's government, which understands and is taking steps to resolve the disputes. But an increase in such dialogue, perhaps involving the public, may help.

Discussions in London often turned to the Shell-Iraq Gas Co. joint venture process, and the ongoing dispute between Baghdad and the Kurdistan Regional Government over rights to sign oil deals, though there has been rapprochement lately.

Oil companies also told Iraq Oil Report that they're encouraged by Iraq moving forward on putting oil and gas field development out for tender, but say there isn't enough information available yet, too many questions remaining and the terms don't look generous enough so far.

The KRG has defended its oil deals and development strategy in a lengthy response posted on its website and directed at Baghdad. It comes after Prime Minister Nouri al-Maliki made his first condemnation of the KRG deals, among other accusations of KRG unconstitutional behavior.

India's Oil and Natural Gas Corp. is in near-end stage talks with Iraq's Oil Ministry over a Saddam-era contract, the Press Trust of India reports. The production sharing contract signed in 2000 will likely be renegotiated to a service contract, like the Saddam-era deal with the China National Petroleum Corp. and the deals negotiated currently with Petrovietnam and Pertamina.

Oil Minister Hussain al-Shahristani led a delegation in meeting with the chief of integrity, Judge Raheem al-Egayli.

Iraq will increase refining capacity by 750,000 barrels per day if refineries recently approved are built. Bloomberg reports new Kirkuk, Karbala and Maysan refineries will have 150,000 bpd capacity and Nasiriyah will be 300,000 bpd. Iraq will need to boost investment in its upstream and midstream infrastructure, let alone production, if it were to fill the increased refining capacity.

The U.S. official tasked with keeping watch on dollars and dinars spent on reconstruction says he wants to stay on the job. Matt Kelley reports for The USA Today the Special Inspector General for Iraq Reconstruction, Stuart Bowen, has briefed the Obama transition team and "plan to continue to do the job I've been assigned." Bowen was connected to Bush from Texas but has irked everyone with his audits, a positive attribute for an inspector general.

Iraq and Kuwait will have better naval interaction in their shared Gulf waterway, the Associated Press reports.

A thousand immigrant workers brought to Iraq by a Kuwaiti subcontractor to KBR's U.S. military contract have been held hostage in a Baghdad warehouse, Adam Ashton reports for McClatchy Newspapers. The workers protested Tuesday. "It's really dirty," a Sri Lankan man told McClatchy, speaking on the condition of anonymity because he still wants to work for Najlaa. "For all of us, there are about 12 toilets and about 10 bathrooms. The food — it's three half-liter (one pint) bottles of water a day. Bread, cheese and jam for breakfast. Lunch is a small piece of meat, potato and rice. Dinner is rice and dal, but it's not

dal," he said, referring to the Indian lentil dish." The company, Najilaa International Catering Services, has agreed to back pay and to send the workers home.

Baghdad's Bridge Over Troubled Water: Sunni and Shia neighbours welcome reopening of symbolic bridge after notorious stampede, Shawkat al-Bayati reports for the Institute for War & Peace Reporting.

All Aboard from Baghdad to Basra

The mayor of Baghdad has announced plans for an underground train system that will not only help commuters in the capital avoid traffic jams, but will stretch between what are now Sunni and Shiite dominated areas of the city, Martin Chulov reports for The Guardian.

The Iraqi Railways Co. has already restarted its line from Baghdad to Basra and a month ago began a commuter train in Baghdad, Tina Susman and Caesar Ahmed report for the Los Angeles Times.

Alive in Baghdad: 100 Years Later, Iraq Railroad Still Runs

Read what Iraqis read: the Iraq Press Roundup by UPI's Alaa Majeed.

A new security deal defining the security relationship between U.S. forces and the U.N. mission in Iraq may be necessary once the current mandate expires, UPI reports. The U.N. Security Council in its December report noted Resolution 1790 will expire at the end of the month because of the passage of the U.S.-Iraqi agreement that replaces the mandate for Iraq.

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## 6. IRAN CONFRONTS AN 'ECONOMIC EVOLUTION'

Ahmadinejad's Plan to Curb Government Subsidies Threatens to Alienate Recipients

By Thomas Erdbrink  
Washington Post Foreign Service  
Thursday, December 4, 2008; A10

TEHRAN, Dec. 3 -- Gasoline? It's 36 cents a gallon. Laundry detergent? Fifty cents for a standard-size box. Milk? About 20 cents a quart. These prices are so low because Iran's government spends half its national budget to subsidize many of life's necessities. Not for long.

President Mahmoud Ahmadinejad has launched a sweeping economic restructuring plan that would end many of these subsidies within a couple of months. To blunt the blow of gasoline prices quadrupling and similar increases for other goods, he also proposes to give as much as \$70 a month to poor Iranians.

Ahmadinejad, a populist leader with a working-class background who came to power three years ago, is staking his political future on his ambitious plan, which threatens to alienate Iranians who have benefited from the subsidies. Known abroad for incendiary rhetoric and his defense of Iran's nuclear program, Ahmadinejad's domestic political standing relies more on his largely unfulfilled promises to use Iran's oil wealth to improve the lives of poor people.

Some aspects of the plan, such as a sales tax, have provoked unrest, forcing Ahmadinejad to slow its implementation. The president had said he would present a bill on subsidies to parliament on Wednesday, but the introduction of the legislation was postponed without explanation.

Many members of Iran's urban middle class fear that the plan will ruin them. "If the subsidies are stopped, my family will be pushed into poverty. What the president plans to pay us in return will be far too little," said Payman Vatandoust, a technical manager at a battery factory in Tehran who like many highly educated Iranians did not support Ahmadinejad in 2005.

Vatandoust's worries are shared by several Iranian leaders, many of them adversaries of Ahmadinejad who accuse the president of proposing the cash handouts to boost his popularity in advance of presidential elections set for June.

Ahmadinejad says his "economic evolution" plan will narrow the gap between rich and poor and eventually will help bring down inflation, which has risen to an annual rate of 24 percent, according to Iran's Central Bank.

By opening up Iran's closed economy, making trade easier and promoting privatization, Ahmadinejad wants to turn the country into a regional powerhouse, echoing the economic transformation that China began three decades ago. Ahmadinejad says he will bring about similar changes in Iran in three years.

The rapidly falling price of oil presents the opponents of Ahmadinejad's plan with a dilemma. Either they relent and support the proposal or they press the government to continue spending \$90 billion a year -- half of the country's national income -- to pay for the subsidies. Economists contend the status quo is untenable.

In October, when oil was selling for \$70 a barrel, Central Bank governor Mahmoud Bahmani warned of a huge budget deficit if the price did not rise. "If this rate continues until the end of the year, \$54 billion of expected oil income won't materialize," he told the official Islamic Republic News Agency. On Wednesday, Iranian oil was selling for \$42.

Ahmadinejad says his plan will allow the government to save what it spends on subsidies and raise revenue through more aggressive taxation. "Because of this plan, the main part of our dependency on oil price fluctuations will be cut," the president said Tuesday on state television.

Ahmadinejad's plan also serves his political agenda, analysts said. Iran's 1979 Islamic revolution brought to power Shiite clerics and their supporters, who relied on an unorthodox mix of capitalism and socialism in their attempts to make the economy less reliant on the West.

To show the benefits of the revolution, Ayatollah Ruhollah Khomeini promised oil money and free utilities to the "barefooted masses" who had toppled Shah Mohammad Reza Pahlavi. The Iran-Iraq war, international economic boycotts and internal corruption pushed the new government to do more for the poor, resulting in a system of state intervention to keep the prices of basic goods artificially low.

At the same time, wealthy merchants who had backed the revolutionaries because the shah had threatened to break up their monopolies formed lucrative alliances with some of the new leaders.

Ahmadinejad has succeeded in ousting several influential revolutionaries from Iran's small circle of decision-makers, but restructuring the economy would dismantle the system that provided the first generation of revolutionaries with power and money.

"The plan will hurt the bourgeois merchant sector, which has deep links with this group," said Ahmad Zeidabadi, a journalist with Shahrvand-e Emrooz, which published articles critical of the government until authorities closed the magazine in November.

Many merchants oppose Ahmadinejad's plan to broaden taxation.

"The government has the oil, is that not enough? When they want us to pay taxes, the officials should also be transparent on what they do with our money," said Mahmoud Askari, who owns a carpet shop at the Tehran bazaar.

In October, merchants of the country's biggest bazaars closed their stores to protest a 3 percent sales tax, a first step in the economic evolution plan, prompting the government to delay implementing the tax for a year.

"We showed them that we are serious about this. If they try again in a year, we will again close our shops," Askari said. "Life is hard enough without taxes."

But there are signs that Iran's wealthier consumers can withstand sudden shocks. In July 2007, the government instituted gasoline rationing, giving every car owner a monthly allotment of 30 gallons at 36 cents a gallon. Then officials set the price of unrationed gasoline at \$1.44 a gallon. Rioters burned several

gas stations, but the rationing system and the new prices stayed. Gasoline consumption is higher this year than in 2007.

To decide who is entitled to cash payments under the restructuring plan, the government has divided Iranian society into 10 levels, by income. People in the bottom seven groups will receive the direct payments, to a maximum of \$70 a month each.

Those in the lower-middle class, the bulk of people in the capital, will receive less than that. Vatandoust and his wife filled out a form a few months ago so officials could determine the size of their monthly payments. Ahmadinejad has claimed that 65 million Iranians -- virtually the entire population of the country of about 70 million -- have filled in the forms, which he calls a "public referendum" on the plan. The voluntary questionnaires, however, did not give Iranians the option to vote in favor or against the plan.

Together, the Vatandousts bring home about \$500 a month and expect to receive a monthly payment of \$40 each. They say the cash will do little to offset what they fear will be stunning increases in their utility bills.

The Vatandousts' apartment, in a middle-class neighborhood in western Tehran, is crowded with furniture. "I apologize -- we were forced to move to a much smaller apartment when our landlord increased the rent by 50 percent last year," Vatandoust explained as he served fruit and tea. "We now live in a very tiny apartment, but the rent is the same as our old house before the increase."

Vatandoust opened a drawer and showed some of the family's utility bills. Their part of the monthly electricity bill was \$5, while the government paid the rest, \$35. "The same goes for water, gasoline and the telephone. If we have to pay all of those ourselves, our expenses will be seven times higher," he said.

Inflation is also on the mind of Iran's head of parliament, Ali Larijani, a leading opponent of Ahmadinejad. "The parliament will not pass any bill that will increase inflation," he told state television in late November. "And the economic evolution plan is bound to cause more inflation."

Ahmadinejad has urged lawmakers to stay with him. "I will remain and stand by the plan even if it means my government will fall," he said during a separate interview on state TV in October. "This reform will be a great economic victory."

Vatandoust may not wait. "If we get a visa, we will move directly to Germany," he said. "I have heard many promises the last three years, but our lives have only gotten more difficult."

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## 7. CHINA, INDIA WANT MORE COMMITMENT FROM OBAMA ON CLIMATE CHANGE

By Alex Morales

Dec. 4 (Bloomberg) -- China and India, the developing nations with the highest carbon-dioxide emissions, want U.S. President-elect Barack Obama to demonstrate more commitment in tackling climate change, delegates at United Nations talks in Poland said.

Obama has pledged to bring U.S. output of greenhouse-gas emissions back to 1990 levels by 2020. That's still above the limit the world's biggest economy would have been required to meet by 2012 under the Kyoto Protocol, a global warming treaty the U.S. never ratified. It's also short of a European Union pledge to cut the gases 20 percent from 1990 levels by 2020.

"We don't think it's ambitious enough," Su Wei, China's lead negotiator at the Dec. 1-12 climate-change talks in Poznan, Poland, said late yesterday in an interview. "We hope there will be movement."

Delegates from 190 nations have gathered in Poznan, halfway between Warsaw and Berlin, at the midpoint of a two-year negotiation that aims to produce a treaty to fight global warming in Copenhagen

next December. Analysts say agreement between China and the U.S. is crucial to the success of the talks.

"The U.S. and China are the two largest emitters in the world, and they have to come together for the negotiations to work," Alden Meyer, director of policy at the Washington-based Union of Concerned Scientists, said today in an interview in Poznan. "It's important to have countries saying what they expect the U.S. to do, but the main consideration for Obama will be what Congress will accept."

#### Bearing Responsibility

Obama's position on climate change is still "something positive" compared with the stance of President George W. Bush, Su said. Bush, who never endorsed the existing climate protection treaty, the Kyoto Protocol, set a goal on April 16 for the U.S. to stop the growth of greenhouse gas emissions by 2025.

Obama may do more than he's stated once he takes office, said J. M. Mauskar, who's leading India's negotiators during the first week of the UN talks.

"A candidate for a particular post, what he says and what he does, and that same candidate, what he does when he occupies the post, these are two different things," Mauskar said late yesterday in an interview. "President Obama may change his mind and say well we can do much more. I hope so."

Kyoto sets targets for 37 nations that expire in 2012. Countries in Poznan are discussing new targets for parties to that treaty, and also what action might be taken by the U.S. and large developing countries such as China and India in a new pact.

Under Kyoto, the U.S. would have been required to cut emissions by an average 7 percent in the 2008-2012 measurement period compared with 1990 levels. Instead, they were 14 percent above 1990 levels in 2006, according to the most recent UN data. China and India, as developing countries, weren't set targets under Kyoto, and reject goals until the developed world first has led the way.

#### Two Centuries of Smoke

"The current climate-change issue was caused by the excessive emissions by the industrialized nations in the process over 200 years of industrialization," Su said. "They should bear the responsibility to address that problem."

China released 5.6 billion tons of carbon dioxide from burning fossil fuels in 2006, according to the International Energy Agency. That was second to the U.S., which emitted 5.7 billion tons. India had the fourth-highest emissions, at 1.25 billion, behind Russia and just ahead of Japan.

Combustion of carbon-based fossil fuels is the largest contributor of manmade greenhouse gases.

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#### 8. GM, CHRYSLER CONSIDERING BANKRUPTCY TO GET BAILOUT

Thu Dec 4, 2008 5:35am EST

(Reuters) - General Motors Corp and Chrysler LLC are considering accepting a pre-arranged bankruptcy as the last-resort price of getting a multi-billion dollar government bailout, Bloomberg reported, citing a person familiar with internal discussions.

In response to automakers' bailout plea, staff for three members of Congress have asked restructuring experts if a pre-arranged bankruptcy -- negotiated with workers, creditors and lenders -- could be used to reorganize the sector without liquidation, Bloomberg said.

General Motors and Chrysler could not be immediately reached for comment by Reuters.

Industry executives and analysts say the immediate carnage from a bankruptcy of General Motors Corp, Ford Motor Co or Chrysler would spread throughout an industry that is bleeding cash in a global slowdown.

All three automakers have urged Congress to authorize \$34 billion in loans and credit lines, saying they will restructure, and cut models, jobs and executive pay to remain viable.

The White House did not dismiss the industry's \$34 billion figure on Wednesday but said it was too early to say what it might support on an emergency basis.

Senate Majority leader Harry Reid wants to try to find a way to avert threatened bankruptcies in the U.S. auto industry with Detroit Three chief executives readying for a make-or-break hearing on Thursday on the bailout request.

Negotiations currently are splintered among small groups, making it unlikely that a proposed solution such as bankruptcy would emerge until next week at the earliest, the person briefed on internal talks told Bloomberg.

GM's failure alone would mean more than \$200 billion in interest-bearing debt at the carmaker and its GMAC financing arm could be worthless for countless retirees and taxpayers, further upsetting consumption patterns.

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## 9. DETROIT DEMISE WOULD HIT, NOT HELP, ASIAN RIVALS

By Chang-Ran Kim, Asia autos correspondent - Analysis  
Wed Dec 3, 2008 10:41pm EST

TOKYO (Reuters) - Asia's top automakers would not welcome the collapse of one or even all of their three big Detroit rivals, though the likes of Toyota Motor Corp, Honda Motor Co Ltd and Hyundai Motor Co would expect to gain sales in the long term.

Industry executives and analysts say the immediate carnage from a bankruptcy of General Motors Corp, Ford Motor Co or Chrysler LLC would spread throughout an industry that is bleeding cash in a global slowdown.

"If all the Big Three were to fail, the consequences of that are beyond imagination. I think it would upset the very foundation of the U.S. economy," Suzuki Motor Corp CEO Osamu Suzuki warned last week.

GM, Ford and Chrysler have urged Congress this week to authorize \$34 billion in loans and credit lines, saying they will restructure, and cut models, jobs and executive pay to remain viable.

Suzuki's peers agree, maybe reluctantly, that a multi-billion dollar U.S. bailout is inevitable.

"From a business standpoint it would be unfair," Honda Executive Vice President Koichi Kondo told Reuters. "But if the Big Three filed for Chapter 11, that would hurt us badly."

A bankruptcy filing would disrupt every aspect of the automaking industry.

Dealers selling cars for multiple brands would go under; if all the Big Three lost their U.S. operations, nearly 3 million jobs would be lost in the first year, U.S.-based Center of Automotive Research estimates, devastating already frail consumer sentiment.

GM's failure alone would mean the more than \$200 billion in interest-bearing debt at the carmaker and its GMAC financing arm could be worthless for countless retirees and taxpayers, further upsetting consumption patterns.

Perhaps the most damaging scenario would be the domino effect on a complex web of a multi-tiered supply chain.

"The exact consequences are difficult to model, but simplistically, we'd assume the financial impact on suppliers would force many into Chapter 11, and for a period of time they would be unable to produce components for non-Detroit companies," Bernstein Research's Max Warburton wrote in a report.

Deutsche Securities analyst Kurt Sanger said that would leave few main options, none of them desirable, for Toyota, Honda and Nissan Motor Co: speed up payments to suppliers to help with liquidity; switch to backup suppliers, at a cost; or buy suppliers' tooling to continue production.

"The reality is that such a scenario would likely result in a combination of these options," Sanger said.

Japanese brands account for 40 percent of new vehicles sold in the United States, the world's biggest car market, while the Big Three sell just under half. Japanese automakers produce more than 60 percent of their cars for the U.S. market in North America.

"If you're missing even one component, you can't build a car," said Honda's Kondo, noting that parts makers provide 80 percent of a car's components.

Even in an average year, he said, about 10 suppliers fail, making the case for dual sourcing even if that reduces economies of scale.

Automakers helping their suppliers is nothing new.

Even as they sell assets and plead for a government bailout themselves, GM, Ford and Chrysler recently loaned a combined \$60 million to Metaldyne Corp, a maker of metal-based components, because the alternative of letting the Michigan-based supplier fail would have meant certain car models would not be built.

"In the current environment, automakers have to look after all the suppliers, such as Visteon, Delphi and Dana," said Shoichiro Irimajiri, co-chairman at Asahi Tec Corp, the Japanese parts maker that owns Metaldyne.

"But the money is not going to come from shareholders. So ultimately it ends up coming from assemblers who can't afford to stop their lines, which is why Japanese carmakers have been coming to me for reassurance that our finances are okay."

Analysts estimate that up to 90 percent of U.S. auto suppliers supply multiple customers, meaning a shutdown carries a risk of disrupting production also at European and Korean automakers such as Volkswagen AG, BMW, Daimler AG and Hyundai.

So, what would be an ideal scenario for Japanese carmakers?

"In a nutshell, a soft-landing, or government bailout, would be better than a hard-landing," said UBS Securities analyst Tatsuo Yoshida.

"At the end of the day, Japanese, European and Korean carmakers are going to eat away at the Big Three's market share, whether that takes three years or five years.

"A soft-landing would make the path to that a much smoother one."

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## 10. U.S. ECONOMIC STIMULUS PLAN TIED TO ENERGY SAVINGS

By John M. Broder  
NY Times  
Thursday, December 4, 2008

WASHINGTON: President-elect Barack Obama and leaders in Congress are fashioning a plan to pour billions of dollars into a jobs program to jolt the economy and lay the groundwork for a more energy-efficient one.

The details and cost of the so-called green-jobs program are still unclear, but a senior Obama aide, speaking on the condition of anonymity to discuss a work in progress, said it would probably include the weatherizing of hundreds of thousands of homes, the installation of "smart meters" to monitor and reduce home energy use, and billions of dollars in grants to state and local governments for mass transit and infrastructure projects.

The green component of the much larger stimulus plan would cost at least \$15 billion a year, and perhaps considerably more, depending on how the projects were defined, aides working on the package said.

During the campaign, Obama supported a measure to address global warming by capping carbon emissions while allowing companies to buy and trade pollution permits. He said he would devote \$150 billion of the revenue from the sale of those permits over 10 years to energy efficiency and alternative energy projects to wean the nation from fuels that are the main causes of the heating the atmosphere.

But the Obama adviser who discussed the green energy project said Obama would not await passage of a global warming bill before embarking on the new energy and infrastructure spending. House and Senate supporters of a climate bill said they would continue working on legislative language but did not expect quick action on a cap-and-trade law because of the economic emergency.

That means that the green-jobs program would not be financed with pollution credits bought by power generators and other carbon emitters, but instead would be added to the budget deficit.

Congressional officials working with the Obama administration said the stimulus program was also likely to involve tax breaks or direct government subsidies for a variety of clean energy projects, including solar arrays, wind farms, advanced biofuels and technology to capture carbon dioxide emissions from coal-burning power plants.

The programs will be a part of a larger economic stimulus package whose outlines are faint but which is expected to cost \$400 billion to \$500 billion. Obama has said that his goal is to create or save 2.5 million jobs in the next two years. He has assigned to his economic and environmental advisers the task of devising a proposal that is expected to combine a shot of new federal money into existing federal and state programs and the possible creation of agencies modeled on New Deal public works programs.

"We'll put people back to work rebuilding our crumbling roads and bridges, modernizing schools that are failing our children, and building wind farms and solar panels, fuel-efficient cars and the alternative energy technologies that can free us from our dependence on foreign oil and keep our economy competitive in the years ahead," Obama said in a radio address last month, echoing a campaign promise with a new sense of urgency.

The political climate seems favorable to an economic stimulus plan, but large sums of new money touch off lobbying frenzies and energy projects spur debate between conservationists and those who want to more fully exploit domestic sources of oil, natural gas and coal.

Some experts said the record of government's intervention in energy markets and new technologies was not promising, citing as a spectacular example the Carter-era Synthetic Fuels Corporation, which spent more than \$3 billion without producing any commercially usable amount of coal-based liquid fuel.

Ethanol and other non-oil-based fuels have also not proved their commercial value, in some cases yielding less energy than was needed to produce them, or, in ethanol's case, diverting land to corn and driving up food prices.

The plan could also face resistance from fiscal hawks. In 2004, Senator John McCain, Republican of Arizona, almost single-handedly blocked a \$100 billion energy package, saying the billions of dollars in

subsidies for ethanol and other alternative fuels were little more than a special-interest boondoggle. The bill was revived a year later at half the cost, and much of the money in it has not been spent.

"Now they're talking about some large amount of money ? what, \$100 billion? ? and spending it on windmills, job training, whatever," said David Kreutzer, who studies energy economics and climate change at the Heritage Foundation, a conservative research group. "But where do you get the \$100 billion in the first place? Are you going to take \$100 billion from some other part of the economy, are you going to tax some people to pay for it? Are you just going to print it or borrow it? The money has to come from somewhere."

The Obama team and congressional leaders say they want a plan ready shortly after Congress reconvenes in January.

Obama has said that, after stabilizing the economy and the markets, putting the nation on the path to a more energy-efficient future is his top priority. The House speaker, Nancy Pelosi of California, said this week that rebuilding infrastructure and creating green jobs was "the first order of business that we will have" when Congress reconvenes in January. Several hearings are planned even before Obama takes office on Jan. 20.

State officials say a lack of financing has stalled billions of dollars in projects. Governor Arnold Schwarzenegger of California told Obama this week that the states were ready to break ground with \$136 billion in infrastructure projects that could provide new jobs within two years.

The American Public Transportation Association, which represents local mass transit authorities, said there were \$8 billion in "ready-to-go" projects that could preserve or create thousands of jobs and provide more energy-efficient transportation.

Beverly Scott, the chief executive of Atlanta's transit agency and head of the national association, told Congress in October that the projects included diesel-electric hybrid buses for Chicago; a new bus maintenance shop for Eugene, Oregon; and a set of crossover tracks to allow San Francisco's rapid transit trains to turn around more quickly and carry more riders.

The Obama aide said the residential smart meters were a relatively small project that would not create a large number of jobs, but the aide said they would be an essential building block for the electric grid of the future. The new grid ? a multiyear, multibillion-dollar project ? would more efficiently move electricity from its source to its destination and would reward those who saved power or used it during off-peak hours.

Senator Jeff Bingaman, Democrat of New Mexico, who heads the Energy and Natural Resources Committee, said he was sympathetic to Obama's desire to pump up the economy and reduce energy usage. But Bingaman said he was wary of big government spending programs without sufficient oversight or expertise.

"Just buying smart meters for everybody doesn't really move the ball very far," said Bingaman, who will hold a hearing next week to gather ideas for energy-related stimulus spending. "Realistically speaking, getting money properly spent in a short period of time requires some degree of competence in the government agency doing it. The best plan is to start with existing programs that work, like weatherization, and build on those."

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11. MMS: 14.9% OIL, 20.9% GAS OUTPUT STILL OFF LINE IN US GULF

HOUSTON (Dow Jones)--Output of crude oil and natural gas from the Gulf of Mexico increased from two weeks ago, as energy companies worked to restore production that was shut in by Hurricane Ike, the U.S. Minerals Management Service said Wednesday.

The agency reported that 14.9% of crude oil, or 193,910 barrels a day, remained shut in. The agency did not report figures last week but on Nov. 19 reported that 16.3% of oil was still off line.

The production figures are estimates based on reports of what operators expect their output to be, MMS said.

Natural gas output of 1.544 billion cubic feet a day, or 20.9%, also remained off line. On Nov. 19, the agency reported that 24.4% of gas was still off line.

The Gulf of Mexico produces about 1.3 million barrels of oil a day and about 7.4 Bcf of natural gas, the MMS said.

Workers remained evacuated from 51 production platforms, or 10% of the 694 staffed production platforms in the Gulf of Mexico, the MMS said, citing numbers it gathered by 11:30 a.m. CST Wednesday.

It could be six months before some facilities are operational.

All of the rigs in the Gulf are staffed.

Hurricane Ike made landfall on the Texas Gulf Coast Sept. 13 as a Category 2 hurricane.

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## 12. RIG COUNT MUST DROP TO REVIVE GAS MARKET, XTO SAYS

By Dan Lonkevich

Dec. 3 (Bloomberg) -- Natural-gas producers must shut down more drilling rigs to stem a decline in prices for the fuel, XTO Energy Inc. Chief Executive Officer Keith Hutton said.

There were 1,443 rigs drilling for gas as of Nov. 28, a drop of 10 percent from 1,606 on Sept. 12, according to data from Baker Hughes Inc., the world's third-largest oilfield-services provider.

"I think you'll see it drop to 1,200 rigs," Hutton said in an interview today. "Then you won't be able to grow production, and prices will have to rise."

Natural-gas futures traded in New York have fallen 54 percent since touching \$13.694 per million British thermal units on July 2, the highest since December 2005. The January futures contract settled at \$6.347 today on the New York Mercantile Exchange.

"Gas prices will stay where they are through the first quarter" said the 49-year-old Hutton, who succeeded founder Bob Simpson as CEO on Dec. 1. Simpson, 60, who engineered the company's \$4.2 billion acquisition of Hunt Petroleum Corp. in September, remains as chairman.

Hutton, who previously was president of Fort Worth, Texas-based XTO, said he might increase his holdings in the company, which were pegged at 2.9 million shares in a Nov. 26 filing.

"I believe in the company, and 90 percent of my wealth is tied up in it," he said.

XTO rose 13 cents to \$35.74 in New York Stock Exchange composite trading. The stock has dropped 30 percent this year.

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## 13. OIL-PRICE DROP FORCES BIG ENERGY TO RETREAT

By Stephen Gandel

Time Magazine

Wednesday, Dec. 03, 2008

Shortly after the 6 a.m. shift change, drilling crews start pouring into the Base Camp Café in Rifle, Colo. Business has been booming at the diner for much of the past few years as rising energy prices have

increased exploration activity at the nearby natural-gas-rich Piceance Basin. Four years ago, the café moved to a new, 100-seat location to accommodate the crowds.

But lately, the wait for the café's signature Packer breakfast sandwich, which is two eggs and sausage covered in gravy on a biscuit, has been shorter than usual. On a recent Tuesday morning at 7 a.m., the restaurant was only a quarter full. "One of the drilling crews just got laid off," says waitress Theresa Steffen. "It's slowed down a little."

Across the country, energy companies are quickly cutting their exploration efforts. On Tuesday, oil fell to \$46.85 a bbl., its lowest price in 3 1/2 years, down significantly from the \$140 it traded for this past July. Natural-gas prices are well off highs too. And that is causing energy executives, recently determined to drill in places long considered uneconomical, to rethink their plans. "Oil and gas companies are going to meaningfully cut their budgets next year," says Larry Nichols, chief executive of Devon Energy, one of the nation's largest exploration companies. "And that includes us." (See TIME's photo gallery "Oil in the Sand.")

In some places, like northwestern Colorado and Montana, exploration could drop as much as 40% in the next few months. Experts say the resultant drop in oil and natural-gas supplies could cause energy prices to spike sometime next year, further slowing the nation's economic recovery. Last month the International Energy Association warned that oil prices could return to record highs if energy companies pull back their investments. "I worry that the downward slide in prices is causing the industry to overcorrect," says John Harpole, who runs Mecator Energy, a natural-gas broker. "We are going to see higher tops."

Up until a few months ago, energy exploration was one of the few bright spots in the darkening U.S. economy. There were 165,500 people in the U.S. working on oil- and gas-drilling crews at the end of October, up 11% from a year earlier, according to the Bureau of Labor Statistics. All mining support-service jobs, including those in the coal business, were up an even larger 17%, to 343,000. Now energy companies are sure to pull back. And that could make the nation's economic recession even worse, taking job losses to areas that had so far dodged the downturn. Denver-based Delta Petroleum said it planned to cut its capital budget in half next year. Other companies are not waiting until next year. Matthew Simmons, who heads Simmons & Co., an investment-banking firm focused on energy companies, says he has been surprised at how fast firms have begun to cut exploration. He has already heard of a number of drilling projects that have been put on hold. "Unless prices rebound fast, energy companies are going to spend less next year," says Simmons.

It's not just falling prices that are causing companies to pull back. Some are worried that Democrats in Washington will soon push through regulations that will increase costs. What's more, Simmons says, the credit crunch is having an effect. "Drillers have to rely on their own cash flow, and that means some projects don't work anymore," says Simmons. "No one wants to count on bank financing."

Few places seem to be hit as hard as northwestern Colorado. New drilling technology and rising energy prices caused exploration to flourish in the region in the past few years. The Piceance Basin alone drew dozens of exploration firms, including large companies like Chevron. Now those firms are pulling back. Harpole expects the number of rigs in the Piceance Basin, which energy experts say is one of the largest natural-gas reserves in North America, to drop 40% in the coming months. "There is a systematic change in thinking among energy companies that you could not have guessed just six months ago," says Harpole. "The places with the highest drilling costs will see a reduction first, but rig counts are going to decrease everywhere."

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**14. DISAPPOINTMENT WITH OIL SANDS UPGRADER PROBLEMS**

Jonathan Ratner  
FP Trading Desk

Two oil sands upgraders – one belonging to Shell Canada Ltd. and the other to Suncor Energy Inc. – are on the fritz in Alberta right now, and at least one brokerage house is voicing its disappointment.

One of Suncor's two upgraders near Fort McMurray will undergo three to four weeks repair after a Nov. 26 fire. The blaze, which was quickly extinguished, took place as Suncor restarted the facility after it had been shut down for planned maintenance. One of the upgraders will operate at reduced rates, prompting UBS Securities to chop its 2009 production estimate to 277,000 barrels per day, down from 285,000 barrels per day, and its 2008 estimate down to 226,382 barrels per day.

"Suncor's reliability and execution has suffered throughout 2008 resulting in a derating of the company's once premium valuation. This latest fire certainly doesn't help the company's credibility," UBS said in a report. "For Suncor to regain its premium valuation the market will need to see vastly improved execution and reliability."

Meanwhile, Shell's Scotford upgrader just outside of Edmonton suffered a mechanical glitch in the middle of November, and part of it will be out of commission until the late December, spokesman Randy Provencal said Tuesday. As a result, its production will be reduced, and production at the company's Albion oil sands project will be slowed.

The Scotford upgrader feeds Shell's adjacent refinery, and Mr. Provencal said the company has secured additional feedstock to insure it operates at full steam. Until the upgrader is back on track, the facility will produce a higher percentage of heavy oil.

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## 15. NORWEGIAN PROJECTS AT RISK BY LOW OIL PRICES, FINANSVISEN SAYS

By Meera Bhatia

Dec. 4 (Bloomberg) -- New projects and planned exploration on the Norwegian shelf may be postponed should oil prices remain below \$50 a barrel, Finansavisen reported, citing Director General Bente Nyland at the Norwegian Petroleum Directorate.

Falling oil prices, rising costs and the global credit crisis may make new projects unprofitable, Nyland told the Oslo-based newspaper.

Investments for 2009 will probably not be affected since these are already set, she said, according to the newspaper. If projects would be stopped production could be affected four to five years later, the newspaper reported.



**A common day in the life of a Chinese coal truck driver  
The traffic jam of solely coal trucks  
on the highway from Mongolia to Beijing**

**Photo courtesy of Eefje Aarnoudse**

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## 16. THE IEA WEO 2008: LONG TERM PROSPECTS FOR COAL PRODUCTION

Posted by [Rembrandt](#)  
The Oil Drum  
December 4, 2008 - 2:24am

The International Energy Agency expects coal production to nearly double by 2030 in their World Energy Outlook 2008 if no large scale governmental intervention occurs. In this post, I analyse the likelihood of this happening from the perspective of available coal reserves.

My conclusions are that if we look at a global level, taking coal reserve

data at face value, the global IEA reference scenario for coal production to 2030 is possible. However, when focusing on China, the country that now produces 41% of all coal, the scenario is unlikely to occur because China possesses insufficient coal reserves to sustain production to 2030 at the level expected by the IEA. Only in a highly optimistic case, if China's coal reserves are more than double those currently known, will China be able to sustain coal production as expected in the IEA reference scenario.

Based on available coal reserve data and scenarios (EWG 2007; Tao and Li 2007), it is much more likely that China will reach a plateau in coal production somewhere between 2015 and 2025. The implications of this are significant, because it will be extremely difficult, if not impossible, to substitute other energy sources for coal on the vast scale needed for Chinese growth. The quality of reserve data is poor, however. Better reserve data is needed, particularly for China, to have certainty with respect to these findings.

In a follow up post, I will take a look at the short term prospects to 2015 for coal production, imports, exports, and prices in relation to the World Energy Outlook 2008.

## Introduction

According to "common wisdom", coal is an abundant energy resource. The amount of coal underground is expected by most energy experts to be sufficient to sustain coal consumption until at least the end of the 21st century. Recently, doubts have been raised about this view by two independent studies analyzing the quality of coal resource/reserve data, as well as potential for future coal production (EWG 2007; Kavalov 2007). These reports make it clear that the quality of coal data is very poor and does not support the view that coal consumption can continue to grow in the second half of the 21st century. More importantly, obtaining sufficient coal could become problematic for coal importers in the next two decades due to coal export constraints. For the details on these reports, see [an earlier post by Chris Vernon published on the Oil Drum](#).

In this post, I take an in-depth look at the coal production scenario of the IEA's World Energy Outlook 2008, building upon the research of EWG (2007) and Kavalov (2007). I do not make a distinction among the different types of coal (Bituminous, Sub-bituminous and lignite) in most of my analysis, as this makes the analysis easier, and I think that it will not change the picture to a significant extent.

## The Reference scenario for coal from the IEA WEO 2008

In order to understand a scenario, we need to know how it has been constructed. The IEA looks at future coal production from two perspectives: the availability of the resource and the price of coal in different coal producing markets. Since the formulas used in the IEA model have not been published, I cannot tell in detail how the reference scenario has been created. The following snippet is the only piece of information available:

"The coal module is a combination of a resources approach and an assessment of the development of domestic and international markets, based on the international coal price. Production, imports and exports are based on coal demand projections and historical data, on a country basis. Three markets are considered: coking coal, steam coal and brown coal. World coal trade, principally constituted of coking coal and steam coal, is separately modelled for the two markets and balanced on an annual basis." ([IEA World Energy Model 2008](#))

From that piece of information and some personal experience with economic models, my guess is that model uses separate coal reserves and average price levels for each coal producing country. Based on the demand model that I [described in an earlier post](#), coal production likely occurs in the model in the location where it is most cost effective to produce. Production likely also considers constraining import/export factors, leading to an expected pattern of coal production and trade. I expressly state that I could be wrong here, since no formulas are available. In any case, the World Energy Model of the IEA leads to the following reference scenario in the World Energy Outlook 2008:

*Table 1 - World Primary Coal Production in the IEA WEO 2008 Reference Scenario*

**Table 5.2 • World coal production in the Reference Scenario**  
(million tonnes of coal equivalent)

	1980	2000	2006	2015	2030	2006-2030*
<b>OECD</b>	1 378	1 384	1 446	1 566	1 684	0.6%
North America	672	835	878	962	1 048	0.7%
United States	640	778	824	894	981	0.7%
Europe	603	306	273	246	208	-1.1%
Pacific	104	243	294	358	427	1.6%
Oceania	77	238	293	358	427	1.6%
<b>Non-OECD</b>	1 196	1 792	2 950	4 180	5 327	2.5%
E. Europe/Eurasia	519	306	357	443	481	1.3%
Russia	<i>n.a.</i>	167	205	295	354	2.3%
Asia	568	1 250	2 316	3 367	4 435	2.7%
China	444	928	1 763	2 647	3 399	2.8%
India	77	209	283	352	607	3.2%
Middle East	1	1	1	2	3	2.2%
Africa	100	187	203	257	271	1.2%
Latin America	9	48	73	110	137	2.7%
<b>World</b>	2 574	3 176	4 396	5 746	7 011	2.0%
European Union	<i>n.a.</i>	306	273	232	180	-1.7%

\* Average annual rate of growth.

As we can see from the table, the scenario shows continuing growth in coal production until 2030 in nearly all regions of the world except Europe. Average annual coal production growth on a world-wide basis between 2006 and 2030 is expected to be 2%.

### What is written in the IEA WEO 2008 about coal reserves?

The International Energy Agency (IEA) uses coal reserve data from the [World Energy Council's \(WEC\) survey of energy resources](#). This is the only public source of coal reserve data in the world; other publications with coal reserve data in the public domain always use data from the WEC Survey of Energy Resources. An example is the widely used [BP Statistical Review of World energy 2008\\*](#).

The IEA uses the WEC coal reserve data without questioning its validity:

"Coal is the most abundant and geographically dispersed fossil fuel. Proven reserves at the end of 2005 were 847 billion tonnes (WEC, 2007)...Current reserves are more than adequate to meet projected growth in coal demand through to 2030 in this Outlook." (IEA WEO 2008, page 127).

In my opinion, the unquestioned use of WEC data by the IEA is a core problem of the coal analysis in the World Energy Outlook 2008. Most of the data provided by WEC is of poor quality and outdated (EWG 2007). This is a result of the manner in which the WEC collects its data. It is collected by [member committees](#) of respective WEC member countries. Members of these teams are in nearly all cases not experts in the field of coal reserves/resources. They rely on asking institutes within their respective country to provide useful data, which is subsequently forwarded to the editors of the survey of energy resources. Furthermore, every individual committee uses its own definitions of reserves and resources (WEC 2007, page 5, 11 and 12).

The effect on coal data can be assessed by looking at the individual WEC reports. I have compared the data on coal reserves from the WEC Survey of Energy Resources 2001, 2004 and 2007. Earlier editions are not available digitally and have thus not been included. In the Survey of Energy Resources, 68

countries are reported to have coal reserves. Of these countries, a total of 39 have had unchanged reserves since the 2001 WEC Survey of Energy Resource (which contains reserve data as of the end of 1999). In addition to these 39 countries, another 8 countries show unchanged reserve data from the 2004 to the 2007 survey. I made a table of the reserves for all 68 countries, together with each country's latest known reserve year, which [can be viewed by clicking this link](#). The top-15 coal reserve holding countries, which account for 96% of all coal reserves, are shown below in Table 2.

Table 2 - WEC Survey of Energy Resources 2007 Coal Reserve Figures in Million tonnes (Top 15 coal reserve countries) - [click for large version](#)

Source: The Oil Drum						
WEC Survey of Energy Resources 2007 Coal Reserve Figures in Million Tonnes (TOP 15)						
Million tonnes	Bituminous including anthracite	Sub-bituminous	Lignite	Total	Year of reported reserve figures	Change in reserves of survey 2007 versus 2004*
United States	112261	100086	30374	242721	2005	1.6% downward revision
Russia	49088	97472	10450	157010	1996**	No change
China	62200	33700	18600	114500	1990***	No change
Australia	37100	2100	37400	76600	2005	2.4% downward revision
India	52240		4258	56498	2005	38.9% downward revision
South Africa	48000			48000	1987****	1.5% downward revision
Ukraine	15351	16577	1945	33873	2005	0.8% downward revision
Kazakstan	28170		3130	31300	2005	0.07% upward revision
Serbia	6	379	13500	13885	2005	16.31% downward revision
Poland	6012		1490	7502	2005	46.4% downward revision
Brazil		7068		7068	2005	35.8% downward revision
Colombia	6578	381		6959	2005	5.2% upward revision
Germany	152		6556	6708	2005	0.5% downward revision
Canada	3471	871	2236	6578	1999 or earlier	No change
Czech Republic	1673	2617	211	4501	2005	18.9% downward revision
<b>TOP 15 total</b>	<b>422302</b>	<b>261251</b>	<b>130150</b>	<b>813703</b>		
<b>All countries total</b>	<b>430856</b>	<b>266837</b>	<b>149755</b>	<b>847488</b>		

\* Revision in reserve figures from 2004 to 2007 report includes changes due to production, quality differences have not been incorporated in the reserve change figure but are based on comparing total figures of all coal

\*\*Russia, WEC member committee is unable to obtain more data for reasons of confidentiality, hence reserves are retained from those given at end 1996

\*\*\*China, Figures from the 1992 survey of energy resources have been retained since each new edition

\*\*\*\*South Africa, data is based on an assessment published in 1987 which has been adjusted with annual production

The table of the top-15 has five anomalies that make it clear that the coal reserve data is of very poor quality:

1)The lack of a reserve updates from the 2nd largest coal reserve holding country, Russia. According to the WEC report this is due to confidentiality issues over Russian coal reserves. WEC has chosen to retain the latest Russian reserve figures available which date back to the end of 1996.

2)The lack of a reserve update from the 3rd largest coal reserve holding country, China. No valid reason is given as to why the figures from 1990 have been retained. One argument is given to support the original data in the WEC report, but this argument leaves a lot to be desired. It is a reference to a paper that was presented at the 11th Session of the UN committee on Sustainable Energy co-authored by Professor Huang Shengchu, vice-president of the China coal Information Institute. In this paper the same reserve figure of 114.5 billion tonnes was published as the one published by WEC in 1992, which according to WEC "indicates a degree of continuity in the official assessments of China's coal reserves and supports the retention of the level originally advised by the Chinese WEC Member committee in 1991" (WEC 2007, page 38).

**3)**The large 38.9% downward revision in the 5th coal reserve holding country, India, in the 2007 Survey of Energy Resources versus the 2004 edition. No reason is given for this large downward revision in the WEC report.

**4)**The lack of a reserve update from the 6th largest coal reserve holding country, South Africa. In the Survey of Energy Resources it is stated that the South African Department of Minerals and Energy has initiated a comprehensive survey to re-evaluate coal reserves but that no information was available as to the progress of this study. Hence the WEC member committee had to revert to using a number from the latest report from the Department of Minerals and Energy which dates back to 1987. This figure has been adjusted by WEC for all the coal produced since then.

**5)**The large downward revision in the 10th largest coal reserve holding country, Poland. The revision is due to a change in the type of reserves reported. Poland now reports only the ultimately recoverable amounts in developed deposits; previously reserves from all known coal deposits were reported.

These five anomalies in some of the largest coal reserve holders in the world make it clear that there is a need to worry about the quality of coal reserve data. Better data is needed as coal reserves could very well be much lower than currently reported. The IEA, however, does not share this concern over data quality:

"Coal is the most abundant and geographically dispersed fossil fuel. Proven reserves at the end of 2005 were 847 billion tonnes (WEC, 2007). . . Current reserves are more than adequate to meet projected growth in coal demand through to 2030 in this Outlook. However the rapid increase in demand in recent years has seen the global reserves-to-production ratio fall sharply, from 188 years in 2002 to 144 years in 2005 (WEC, 2007 and 2004). This fall can be attributed to the lack of incentives to prove up reserves, rather than a lack of coal resources. Exploration activity is typically carried out by mining companies with short planning horizons, rather than by state-funded geological surveys. With no economic need to prove long-term reserves, the ratio of proven reserve to production is likely to fall further." (IEA, WEO 2007, page 128)."

While the IEA does note that the Reserve to Production ratio is dropping sharply, mainly due to increasing demand\*\*, this is not seen as a potential limitation to coal production. A favorable impression of future prospects is given by stating that a lot of coal is left to be explored. This is a hollow statement in the sense that these amounts left to be explored are not quantified by the IEA in any manner. Interestingly, this opinion is in stark contrast with that from the World Energy Council which states in its Survey of Energy Resources 2007, "After centuries of mineral exploration, the location, size and characteristics of most countries' coal resources are quite well known. What tends to vary much more than the assessed level of the resources (in other words, the potentially accessible coal in the ground) is the level classified as proved recoverable reserves (that is, the tonnage of coal that has been proved by drilling etc. and is economically and technically extractable). (WEC 2007, page 13)." As I am not an expert on the topic of coal exploration I cannot judge the value of either statements. I do know that some large coal fields are still being found. A large coal field of 23 billion tonnes of total resources has been uncovered in China since last year ([China People Daily's Online](#)).

What I can say based on current (poor) WEC 2007 reserve figures is that the IEA WEO 2008 reference scenario appears to be a scenario that holds some merit. In this scenario, humanity will have used up 50% of all coal reserves by 2040, and 60% by 2050 (shown in figure 1 below). The remaining reserve percentage is calculated by adding historic coal production to current WEC reserve statistics. This is done based on the assumptions that no new coal fields will be discovered, that the current reserve figures are accurate, and that reserves will not be added due to technological improvements. While we know that all three of these assumptions are incorrect, such a scenario at least tells us that coal production will not outlast the 2nd half of the 21st century without significant increases in reserves, if coal usage continues to grow.

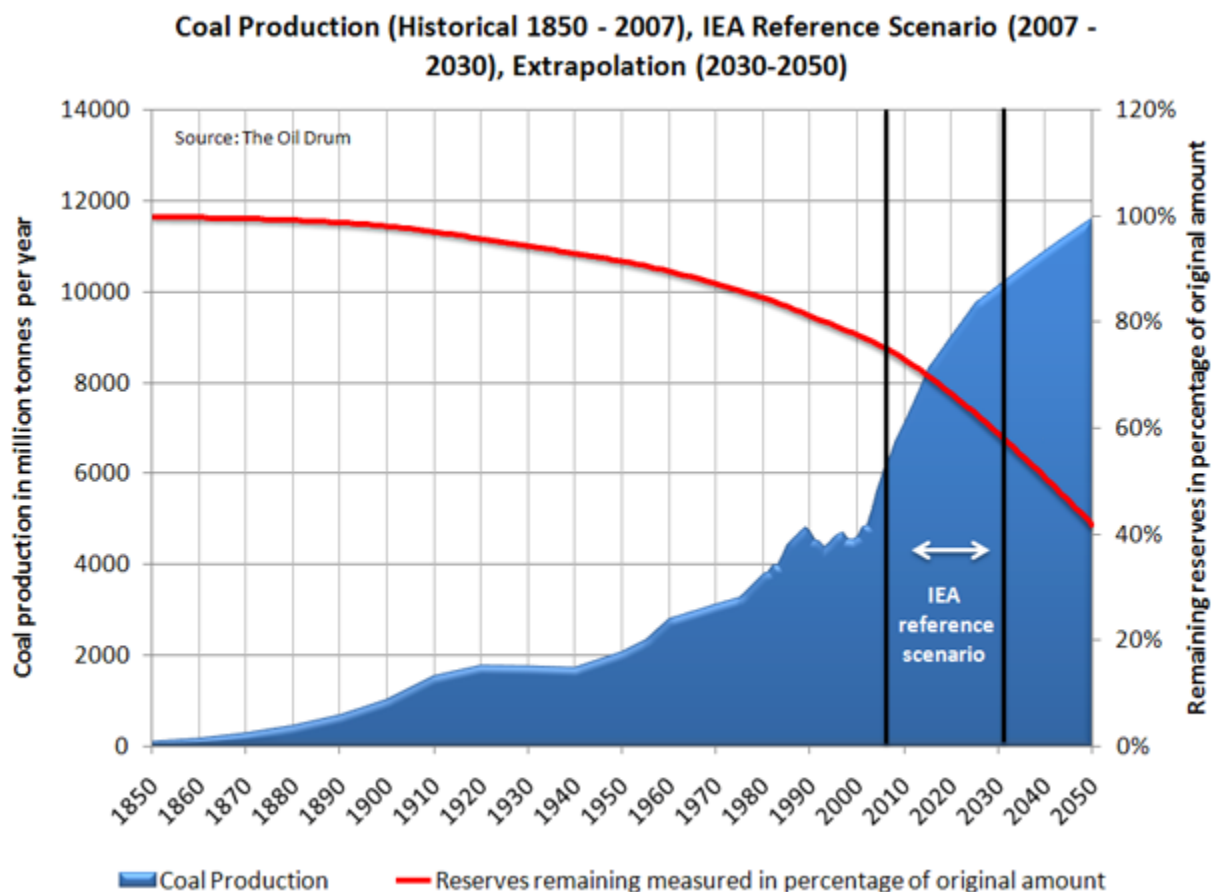


Figure 1 - World Coal Production in blue with 1850 - 2007 (Historical), 2007 - 2030 (IEA WEO 2008 Reference Scenario), 2030 - 2050 (Extrapolation of IEA WEO 2008 reference scenario) and in red the reserves remaining measured in percentage of original amount of reserves.

### The shape of coal production

In order to get a better understanding of the long term production of coal, we need to study the expected production path of this resource. This is one of the the big questions that remains unanswered by the IEA. What will be the shape that coal production takes on a country level and a world level? The IEA just makes a forecast that ends in 2030 without any production shape analysis.

When looking at historical data from the United Kingdom, Germany and Japan, we see a very similar shape for coal production on a country level (Figure 2 below). Coal production reaches a plateau when around 30%/40% of coal reserves have been produced. The plateau lasts for several decades, after which a quite steep decline sets in. I have not studied the underlying economic and geological factors of this shape in detail. My hypothesis is that a physical limitation to coal extraction per time unit occurs due to logistics and energy/economic costs. In the beginning of extraction on a country level, more coal mines can be opened up and it makes economic sense to do so. After several decades the better coal grades in easily mineable coal seams have been depleted, and it becomes more difficult to extract more coal per unit of time out. The costs become too big to increase production; thus a plateau sets in. This is a simple hypothesis that needs to be explored further.

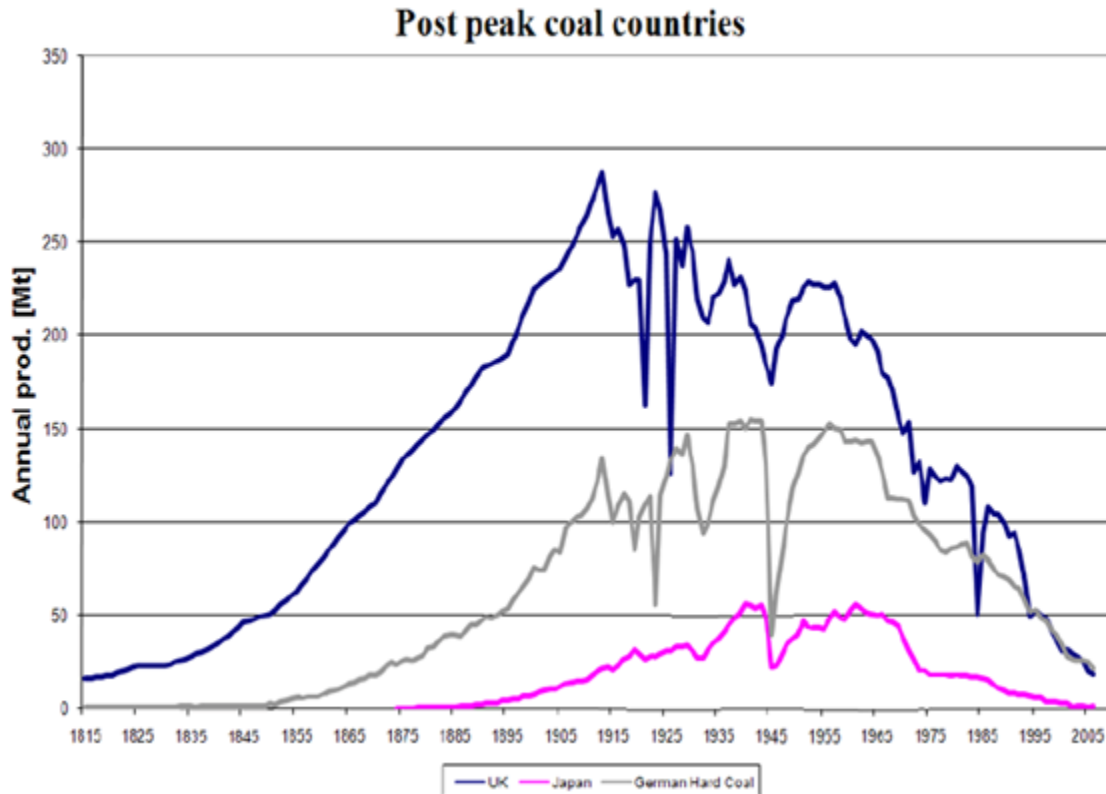


Figure 2 - Coal production in the United Kingdom, Japan and Germany from 1815 until 2005. Source: Uppsala Global Energy Systems Group

In case of the three examples shown above, the decline around 1960 began due to factors affecting the energy market. Between 1957 and 1960, there was an oversupply of coal as demand for coal decreased. The oversupply was caused by a combination of mild winters, several years of low economic growth, an increase of efficiency in the industrial sector, and a shift from coal to oil due to a favorable price difference (Messing 1988). The steep decline of production in Japan, Germany and the United Kingdom after 1960 continued because it became more economic to import coal than to produce it at home. Later on, after 1970, natural gas began to be substituted for coal in the electricity market.

The specific factors at play in these three examples should lead to caution in duplicating this particular shape of production to other countries and the world. In the coal studies that analyze the potential for future production, in my opinion, the duplication of a bell shaped curve with a long plateau is done too readily, without sufficient analysis.

I think that the IEA should work to develop a sound analytical framework for the expected production shape of coal, especially because the geographic spread of coal could cause several important producing countries to run out of coal long before 2050 if usage continues without interference. The first country that is most likely to reach a plateau in coal production is China. This occurs because 41% of all coal production in the world came from the country in 2007.

### China - the key to knowing the long term future of coal

Relative to its current production, China appears to possess sufficient reserves. China has 13.5% of total global reserves according to WEC statistics, which implies that the country extracts 2% of its reserves each year. However, China's coal extraction is growing rapidly at 12% on average in the past five years (18% in 2003 dropping each year since then to 7% in 2007). If the 2007 growth rate of 7% continues, China will be extracting 5% of its reserves per year by 2017.

According to the IEA World Energy Outlook 2008, this will not become a problem. The growth in Chinese coal production is expected to slow significantly, averaging 2.8% between 2006 and 2030, with growth continuing until 2030. If current WEC reserve figures are accepted at face value, it becomes clear that this scenario is not possible, as shown in Figure 3 below. The red line in the figure shows the percentage of reserves remaining based on adding historic production to the WEC reserve figure, and subtracting the reserves produced in the WEO coal production reference scenario for China from this number each year. As can be seen, China will have used up around 50% of its reserves by 2020, and 80% by 2030, in the IEA reference scenario for Chinese coal production.

Based upon empirical data from Germany, UK and Japan as shown above, it is much more likely that China will reach a plateau in coal production somewhere between 2010 and 2020. Again, I have to state as earlier, this is based on the assumptions that no new coal fields will be discovered, that the current reserve figures are accurate, and that reserves will not be added due to technological improvements. While we know that all three of these assumptions are incorrect, it at least becomes clear that the IEA Reference scenario for China is not possible without a very large increase in Chinese reserves.

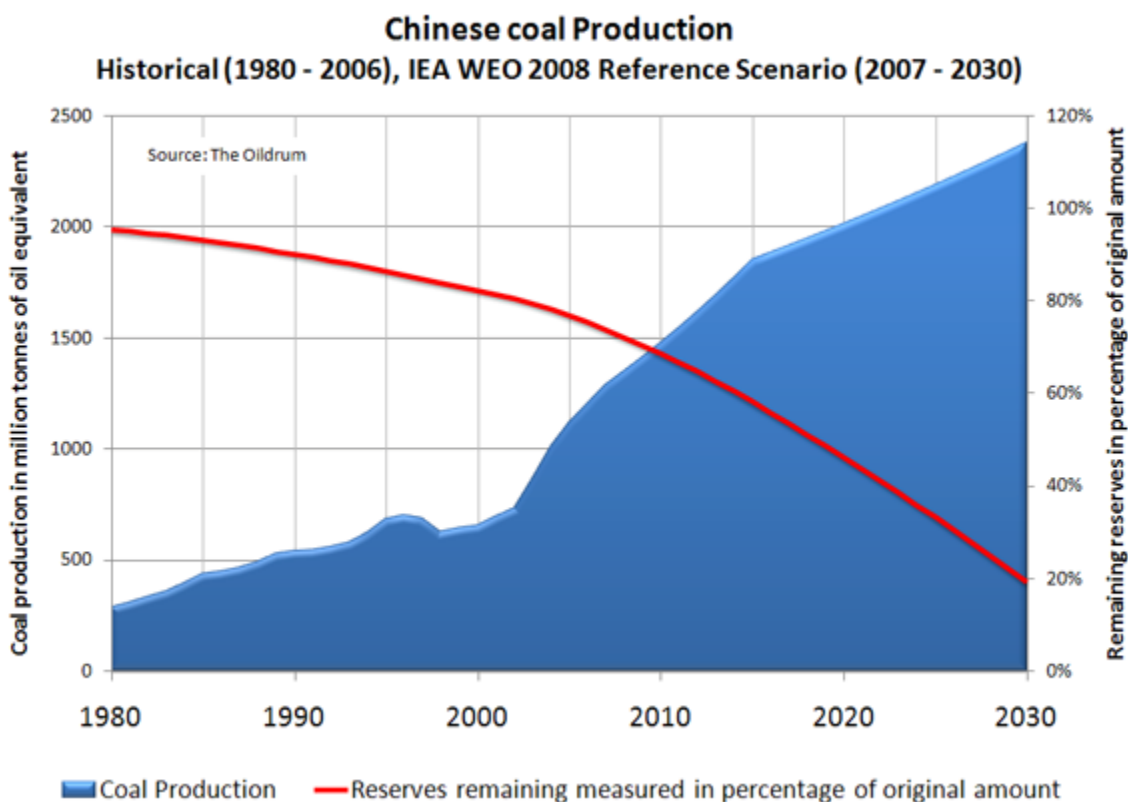


Figure 3 - Chinese Coal Production in blue with 1980 - 2006 (Historical), 2007 - 2030 (IEA WEO 2008 Reference Scenario), and in red the reserves remaining measured in percentage of original amount of reserves.

In the WEO 2008, the IEA does not state what assumptions were made in arriving at their scenario for Chinese coal production. However, some information is given in an earlier report, the World Energy Outlook of 2007. In the 2007 edition a more detailed look was taken on China and India, including Chinese coal production and consumption. Regarding Chinese coal resources and reserves the following is stated:

"China's remaining coal resources are second only to Russia's, totalling 1003 billion tonnes (General Geological Bureau, 1999). These resources have been defined by exploration and mapping, but only 115 billion tonnes can be regarded as proven reserves, yielding a reserve-to-production ratio of around 50 years at current production levels. More recent assessments conclude that proven reserves could be as high as 192 billion tonnes (Barlow Jonker, 2007). A prospecting programme is currently under way to

prove up more resources, using revenues from the competitive tendering of mining rights."(IEA WEO 2007, page 334)

The reference to Barlow Jonker in the piece above quoting 192 billion tonnes, as a potential figure for proven reserves, is the only piece of information that the IEA gives to support their Chinese coal outlook. [Barlow Jonker](#) is a daughter company of [Wood Mackenzie](#). The report the IEA refers to is Barlow Jonker's China Coal Fourth Edition report from 2007 which is available at an unknown price (probably more than \$10,000 dollars) through [Wood Mackenzie's China coal market service](#).

From [Barlow Jonker's statement of capability](#) we learn the following about this report:

"Barlow Jonker's 'China Coal 4th Edition 2007' is the most complete review of China's coal industry available on the market. The 3 Volume Study covers China's coal geology, coal production, transport, consumption and trade. Containing over 500 pages of information and 60 maps it is THE essential reference guide to all involved in and impacted by China's 2.3 billion tonne coal market.

Vol I 'Industry Overview' provides over 250 pages of information on China's entire coal chain from detailed reviews of each province's coal geology, to government policy, coal transport, consumption, and trade. It contains Barlow Jonker's own expert opinion and analysis of a range of drivers shaping the industry and forward outlooks.

Vol II 'Key Producers' has been expanded and contains detailed mine data sheets (including cost estimates) on 66 of China's largest coal producing companies that collectively control over 500 mines together producing over 1,000Mtpa. Also included are data on 230 new coalmine projects with combined new production capacity of over 800Mt. The level of detail, presentation, and analysis of this data exists nowhere else.

Vol III 'Coastal Consumers' is a new addition to the Study examining coal demand in China's coastal provinces – the key region impacting on the international seaborne market. It contains data and analysis of each province's coal demand, including power stations and coke producers. It is essential information for exporters to China, as well as all those impacted by China's involvement in the international seaborne market." (Barlow Jonker 2007)

The report sounds like a worthwhile piece of information, but it is inaccessible due to high costs. Since we cannot read the report, no judgment can be made regarding the validity of the 192 billion tonnes coal reserves figure. However, what is possible is modeling Chinese coal production with a figure of 192 billion tonnes. Even better, to make my life easier, there already is a study in which Chinese coal production is modeled using a similar coal reserve figure. This analysis has been conducted by Tao and Li (2007) from China Northeastern University. In this study a coal reserve figure of 186.6 billion tonnes is taken that comes from the Chinese Ministry of Land and Natural Resources as of 2002. This figure is inserted in a bell shaped production formula after Laherrere (2000) by means of [Stella modeling](#) software. Their results show that Chinese production will begin to plateau around 2025, and the eventual decline sets in around 2035 (green curve in Figure 3 below).

A similar study to that of Tao and Li, based on much lower reserves, has been conducted by the Energy Watch Group (2007). This study concludes that China could reach a plateau in coal production already around 2015, if reserve figures are lower than WEC suggests (blue curve in figure 3 below). The EWG uses a coal reserve figure for China of 95.5 billion tonnes, which is the result of subtracting production since 1992\*\*\* from the WEC reserve figure.

The International Energy Agency reference scenario for Chinese coal production almost exactly matches the Tao and Li (2007) scenario until 2025. After that, the two forecasts diverge, with the IEA expecting continued increasing coal production in China until 2030 (purple curve in figure 3 below), while Tau and Li forecast a Chinese coal production plateau.

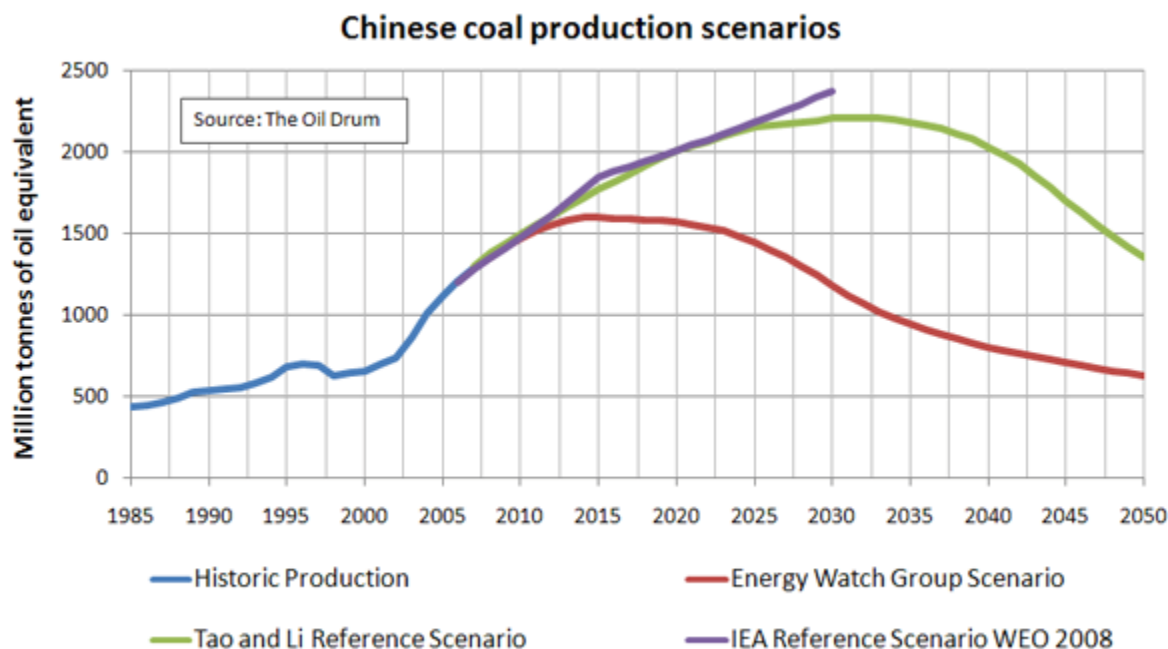


Figure 3 - Chinese coal production scenarios after Energy Watch Group (2007), Tao and Li (2007), and IEA WEO (2008).

The difference between the scenarios caused by doubling the reserve estimate is striking. If the Energy Watch Group scenario plays out, the world will be in significant additional trouble soon (on top of the current problems), since it is unlikely that China's growth boom can continue when Chinese coal production plateaus at the beginning of the next century. There are no energy sources that can grow quickly enough to substitute for China's appetite for more energy in such a short period of time, including the import of more coal. (I will come back to this in the third part of this series.) On the other hand, if Tao and Li's scenario plays out, there probably still is sufficient time for China to prepare for substitution of coal by other energy sources around 2030. In any case, the IEA scenario appears to be unfounded even if we look at a very optimistic coal reserve figure for China.

One of the first issues that needs to be sorted out to get a better grasp at future coal production is the actual state of Chinese coal reserves. As I was writing this post, I investigated whether there are other sources of data for Chinese coal reserves outside of the public domain that are not as expensive as Barlow Jonker's coal assessments. The only source that I found was [China Coal Resource](#). This company gathers coal data based on an extensive resource/reserves classification assessment including grade quality, production location, and coal seam depth and thickness. The details [could be found earlier here](#), but this section has been put into the subscriber part as of last week unfortunately. Subscriptions for [one year](#) to this data cost \$700, which is a very affordable price. Furthermore I am informed by the company after inquiring that the reserves data has just been updated to reflect the latest data as of September of this year. All in all it looks like quite a promising source of data that could shed a great deal of light on China's coal production, and with China the entire world.

## Conclusions

In this post I analyzed the likelihood that the IEA WEO 2008 reference scenario for coal production can happen from a coal reserves perspective. My conclusions are that if we look at a global level and take the coal reserve data at face value, the data is supportive of the global IEA reference scenario for coal production to 2030 which shows on average coal production growth of 2% per year between 2006 and 2030. Beyond this scenario, further growth of coal production into the 2nd half of the 21st century is unlikely to happen without a significant increase in reserves.

However, inasmuch as 41% of coal production is now located in China, looking at whether coal production can match up with global reserves no longer makes sense. When looking at Chinese reserve

data, it is not likely that the IEA reference scenario for Chinese coal production can occur, because the coal is simply not there based on current reserve figures. Only in a highly optimistic case, assuming China's coal reserves are more than double those currently known, will China be able to produce the amount of coal that the IEA expects in their scenario. Based on the available coal reserve data and scenarios (EWG 2007; Tao and Li 2007), it is quite likely that China will reach a plateau in coal production somewhere between 2015 and 2025. The implications of this are significant because it will be extremely difficult, if not impossible, to substitute other energy sources for coal in the quantities needed to maintain China's growth in consumption.

In order to be able to better assess the likelihood of a Chinese coal production plateau occurring and to study the effects of this on coal production on a global scale, better data and analysis of coal reserves in general, and for China specifically, is a necessity.

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## 17. THE 2008 IEA WEO - RENEWABLE ENERGY

Posted by [Robert Rapier](#)

The Oil Drum

December 3, 2008 - 9:16am

As I read through the 2008 International Energy Agency (IEA) World Energy Outlook, I had the distinct impression that I was reading contributions from people with completely opposite points of view. The pessimist warned that we are facing a supply crunch and much higher prices. The optimist in the report said that oil production won't peak before 2030.

This trend held in the section on renewable energy. The optimist noted that renewable energy is expected to "expand rapidly." The pessimist noted that biofuels are predicted to only supply 5% of our road transport fuel in 2030. And so the report goes, part rampant optimism and part rampant pessimism.

I guess the good news then is that there is something in there that will appeal to everyone, regardless of your outlook. The bad news? The claims that are directly opposed to your views will have you questioning the credibility of the report. And if you are like me--and note that between last year's report and this year's report they dropped their 2030 oil demand forecast by 10 million bpd--you are left wondering whether there is any credibility at all in forecasts that far out.

But for what's worth, here's what the IEA had to say about renewable energy.

### Report Highlights

World energy demand is forecast to grow from 11,730 Mtoe (million metric tons of oil equivalents) in 2006 to 17,010 Mtoe in 2030. Fossil fuels, with oil as the primary source, will account for 80% of energy used in 2030.

China and India will be responsible for over half of the increased energy demand between now and 2030. Global demand for oil (excluding biofuels) is forecast to rise from 85 million bpd in 2007 to 106 million bpd in 2030. This forecast was revised downward by 10 million bpd since last year's forecast.

World demand for electricity is forecast to rise from 15,665 TWh in 2006 to 28,141 TWh in 2030. Renewable energy will displace gas to become the second largest producer of electrical energy by 2015, but will still lag far behind coal. For [OECD](#) countries, the increase in renewable electricity is greater than the increase in electricity from fossil fuels and nuclear. The share of nuclear power in the world energy mix falls from 6% in 2008 to 5% in 2030.

Electricity generation from PV and CSP in 2030 is forecast to be 245 TWh and 107 TWh, respectively. Solar PV will continue to have the highest investment cost of all commercially deployed renewable energy sources.

Geothermal and wave technologies are forecast to produce 180 TWh and 14 TWh of electricity in 2030. Over 860 TWh of electricity from biomass is forecast to be produced in 2030. Present conversion of biomass to electricity is at 20% efficiency.

Global output of wind power is forecast to grow from 130 TWh in 2006 to more than 660 TWh in 2015 to 1,490 TWh in 2030. It will become the 2nd largest source of renewable electricity (after hydropower) by 2010. Potential for hydropower in non-OECD countries is still large. Most good sites in OECD countries have been utilized.

Energy storage is rarely the cheapest way of dealing with variability of wind and solar power, but several next generation storage technologies are under development. These include ultracapacitors, superconducting magnetic systems, and vanadium redox batteries. Electrolysis to produce hydrogen, later used in fuel cells on demand is an option, but the overall efficiency is only 40%.

Carbon dioxide emissions from coal combustion are forecast to rise from 11.7 billion metric tons in 2006 to 18.6 billion metric tons in 2030. The ability of carbon sequestration to limit carbon dioxide emissions by 2030 is limited.

The reference scenario presumes that by 2030, the U.S. will only meet 40% of the biofuel mandate set in 2007. In Brazil, biofuels are projected to account for 28% of road-transport fuel demand by 2030. The present amount supplied is equivalent to 13% of road-transport fuel demand. Demand for biodiesel is expected to grow faster than demand for ethanol.

Biofuels in 2006 provided the equivalent of 0.6 million bpd, representing around 1.5% of global road transport fuel demand. The United States is the largest user of biofuels, and most of the recent growth has been in the U.S.

The share of biofuels in road transport fuels is forecast to grow from 1.5% in 2006 to 5% (3.2 million bpd) in 2030. Second generation biofuels based on lignocellulosic biomass, converted via enzyme hydrolysis or biomass gasification (BTL) are expected to become commercially viable. However, the contribution will be minor, and not until after 2020. Capital costs for cellulosic ethanol are "significantly more" than sugarcane or grain-based facilities. As a result, full commercialization hinges on "major cost reductions."

The United States and Brazil both export soybean biodiesel to the EU. (The fact that the U.S. exports any biodiesel is very surprising to me, given the high demand/prices for diesel in the U.S.) Some countries are beginning to scale back their biofuel policies due to concerns about environmental sustainability. Shortages of water availability will be a potential constraint for further expansion of biofuels.

Most biomass will still come from agricultural and forestry residues in 2030, but a growing portion will come from biomass farmed for biofuels. A growing share of biomass is also projected to fuel combined heat and power (CHP) plants.

There is considerable room for growth of solar water heating (water heating consumes 20% of all residential energy consumption). China currently has 60% of the world's installed solar water heating capacity. Solar water and space heating projected to grow from 7.6 Mtoe in 2006 to 45 Mtoe in 2030.

Hybrid vehicles are commercially viable today; electric vehicles have yet to gain traction. Electric vehicle technology is advancing rapidly, but further improvements in storage technology are needed for efficiency and cost improvements. Long term, electric hybrids, fully electric vehicles, and fuel cell vehicles have the most potential for minimizing the need for oil-based fuels. In the very long term--projecting out to 2050--fuel cell vehicles are forecast to make up 33% to 50% of new vehicle sales in the OECD.

Cumulative investment in renewable energy between 2007 and 2030 is projected to be \$5.5 trillion, with 60% of that for electricity generation.

## **Commentary**

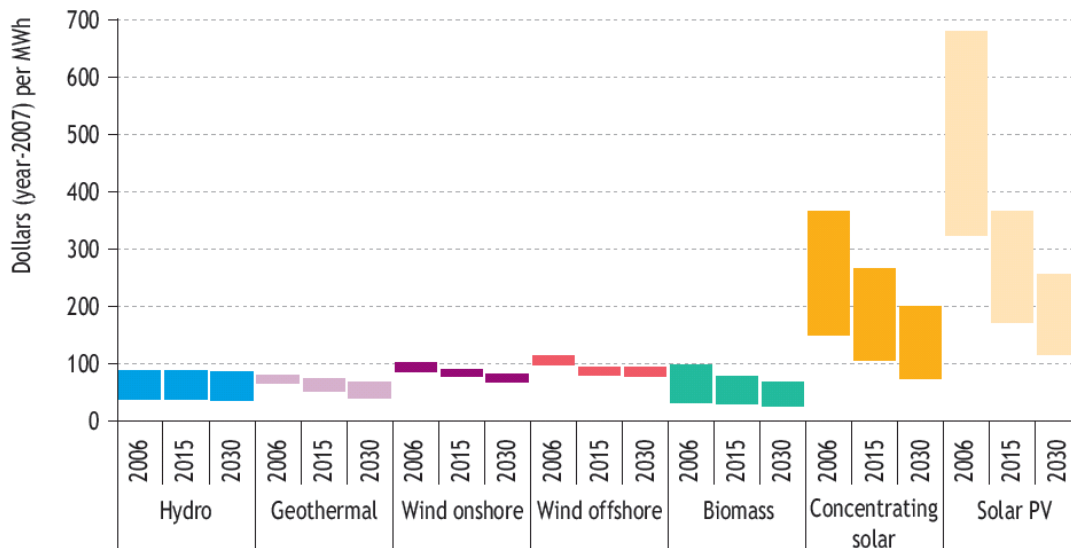
The report reiterates the points I have argued on numerous occasions: Biofuels will not scale up to produce more than a small fraction of our fuel demand, and even then with potentially serious

consequences. While the report spreads the blame for higher food prices on a combination of competition with biofuels, higher energy prices, poor harvests, and various agricultural policies, it correctly identifies water as a (highly underrated) issue in the future scaling of biofuels. On the other hand, the report identifies Latin America and Africa as regions with the potential for boosting biomass production by modernizing farming techniques.

I think the report correctly identifies renewable electricity and renewable heating (especially solar water heating) as areas poised for growth. However, it also predicts that carbon dioxide emissions will continue to rise. This was [a controversial issue I tackled earlier in the year](#), when I predicted "we won't collectively do anything that will reduce worldwide greenhouse gas emissions." I don't think emissions are going to start falling substantially until nature does it for us.

The following figure was very interesting to me:

**Figure 7.5 • Projected generating costs of renewable energy technologies in the Reference Scenario**



Source: 2008 IEA WEO

This figure suggests that by 2030, the cost for solar PV and CSP will still be higher than all other renewable technologies are today. And not just a little higher: solar PV is predicted to be twice as expensive in 2030 as hydro and onshore wind are today. So much for Moore's Law applying to solar PV.

However the nagging issue for me is the credibility of the predictions. How much stock can I put into the renewable energy predictions from an agency that thinks oil production won't peak until 2030, and that demand will exceed 100 million bpd ([contrary to the opinions of two Big Oil executives](#))?

## Conclusions

The renewable energy portion was a tale of two technologies: Renewable electricity and renewable biofuels. Renewable electricity is forecast to grow rapidly, and make up an increasing portion of electricity supplies. The share of nuclear power falls, but coal usage is projected to rise 60% by 2030 (with 90% of that increase in non-OECD countries). The expected increase in coal usage helps explain why greenhouse gas emissions are forecast to continue rising.

Renewable biofuels, by contrast, are forecast to still make a very small contribution to overall road transport fuel by 2030. Cellulosic ethanol will be slow to be commercialized, and the contribution to fuel supplies by 2030 is expected to be small. Concerns about negative externalities will grow, and the impact of biofuel production on water supplies will be hotly debated.

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## 18. OIL BECOMING THE REALM OF DESPOTS

Claudia Cattaneo  
Financial Post  
Wednesday, December 03, 2008

Petroleum Intelligence Weekly's annual list of the world's Top 50 oil companies confirms an alarming trend: The world's petroleum riches are sliding further into the hands of state-owned oil companies, with Russian and Chinese companies making the biggest gains in the past year, while publicly traded Western oil companies are fighting for a shrinking pie.

Among the key findings released this week: For all the talk about Canada's huge oil sands reserves and their potential, only two Canadian companies, EnCana Corp. and Canadian Natural Resources Ltd., made the elite list, ranking 34th and 39th, respectively, behind even such government-owned lightweights as Colombia's Ecopetrol and Uzbekistan's Uzbekneftegas.

Two state-owned companies, Petroleos de Venezuela and China National Petroleum Corp., climbed to the No. 4 and No. 5 spots last year, pushing down BP PLC and Royal Dutch Shell PLC., according to the New York-based publication, which bases its rankings on a combination of oil companies' most meaningful operational data: oil and gas output, reserves, product sales, distillation capacity, revenues, profit, assets, employees.

Saudi Aramco, owned by the Saudi monarch, is the world's top oil company, followed by Iran's NIOC as No. 2.

Exxon Mobil Corp., much vilified in the U.S. for being too profitable, hung onto its No. 3 spot and remained the only publicly traded company among the world's top five.

Other interesting results: CNCP is the world's No. 1 company based on the number of employees: nearly 1.7 million, a state unto itself (compare that with Canadian Natural's 3,700). Exxon Mobil makes the most money, with annual revenue of \$371-billion. Russia's Gazprom is the world's No. 1 gas company, with volumes of 53 billion cubic feet a day, about 17.5 times those of Canada's largest gas producer, EnCana.

Three major reasons we should care: energy security, climate change and the market.

The study highlights that the West's worry about energy security is well-founded. While oil companies get all the flak about gasoline prices, oil is the realm of despots.

Indeed, the world's six oil majors - Exxon, BP, Shell, ConocoPhillips, Chevron, Total - control a puny share of the world's oil reserves, 3.7%, down from 4.7% a decade ago; produce 14.6% of the oil, down from 16.6% a decade ago; and 14.4% of the gas, down from 18.9% a decade ago, according to PIW. Given the state of affairs, it's no wonder they are piling into Canada's oil sands.

While the oil-price slide has eased the urgency to secure new oil sources, it's also making the problem worse. Consider that the rankings are based on 2007 results, the last year for which data is available. The spending cutbacks announced by scores of publicly traded companies, particularly in Canada, in the past few months will result in production declines, accelerating their shrinkage.

If the oil collapse means a new wave of mergers and acquisitions, as many analysts predict, there will be an even smaller shareholder-owned industry, based on past experience. The last acquisition wave 10 years ago that created the super majors failed to grow their oil production and reduced their share of the world's oil market, PIW said.

The green movement is likely re-enforcing the trend. While keeping up the pressure on publicly traded companies to reduce their greenhouse gas emissions, making their operations more expensive, it's giving a free ride to state oil companies that are by far the world's largest producers of fossil fuels. The

shrinkage of Western companies is also bad news for development of technologies to reduce carbon emissions. It's shareholder-owned oil companies that are the most likely to make the investment, while state-owned companies have a long history of funneling oil revenue to support state programs and under-investing in their own operations.

For the market, the trend means fewer opportunities to participate in the oil business even as oil demand increases over the long term, and a continuing transfer of wealth from consuming to producing countries. It's food for thoughts for politicians putting all their eggs in the immature, green-energy basket.

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## 19. ECONOMISTS WITHOUT A CLUE

By Richard Heinberg  
Post Carbon Institute

Prepare to observe the spectacle of the two great economic paradigms of the twentieth century crashing to the ground, locked in mortal combat.

A hundred years past, markets ruled freely: fortunes were made, workers abused, bubbles blown. According to the Austrian School of economists, led by Ludwig von Mises, this was all as it should be: despite any temporary pain or inconvenience, the unfettered market always knows best how to allocate goods and organize investment and labor.

But the ensuing pain and inconvenience were just too much for the various stripes of Marxists and socialists, some of whom led a revolution in Russia to establish the first state-controlled, planned economy.

The catastrophes of the Great War and the Great Depression led to the ascendancy of John Maynard Keynes, the British economist who argued that even capitalist economies needed regulation and controls in order to avoid excessive manias and subsequent implosions.

Keynesianism reigned supreme throughout the middle decades of the century, as the US, Britain, and nearly every other country adopted regulations on banking, finance, and industry, in many cases going so far as to nationalize railroads and other central features of the productive economy.

Meanwhile, rival economist Friedrich von Hayek and his followers quietly plotted the Austrian School's revenge—the occasion for which was offered by the stagflation of the 1970s. Von Hayek, who had raised a generation of followers (including Milton Friedman) at the Chicago School of Economics while toiling in obscurity, was now prominently rewarded with the so-called Nobel prize in economics (there actually is no prize in economics offered by the Nobel family), and his acolytes Margaret Thatcher and Ronald Reagan promised to show the world the way back to freedom and prosperity: government was the problem, they proclaimed, and privatization the solution!

The ensuing three decades have seen economists crowding back to the "Let Markets Rule" side of the ship, as they giddily praised the wonders of globalization and free trade.

Now with the Collapse of 2008, economists are rushing to announce a new era of neo-Keynesianism: lack of regulation in the finance industry has led to a cataclysm of unimaginable proportions, and only massive government intervention can put us back on track.

Sadly, this time the tracks have been moved, maybe dismantled altogether. The two great economic paradigms of our age simply took too much for granted. They assumed that economies run on money and labor, whereas real economies also need energy and natural resources. They assumed that because population, resource extraction, and available energy had grown throughout the 19th and 20th centuries, they would continue to grow in perpetuity; all that was necessary was to properly adjust the relations between money, market forces, and government regulation. No one (within the economics profession) stopped to think that limits to Earth's supplies of fossil fuels, topsoil, water, and other resources might impose ultimate limits on economic activity.

The fields of ecological economics and biophysical economics have sprung up in the past two or three decades to fill in this enormous blind spot of conventional economic thinking, but both are currently marginalized to the point of irrelevance.

In the months and perhaps years ahead we will see a titanic battle to the finish between the free marketers and the state controllers over who is right about the economy, and about who is capable of restoring the beatific condition of perpetual growth. Sadly, neither camp has the answer this time around. Humanity has reached a significant physical limit to growth—Peak Oil—that will spell ruin to all economic philosophies that fail to take such limits into account.

How long will it take the theoreticians to figure this out? How much of our remaining wealth will they destroy in a futile attempt to prove one or another of their paradigms to be eternally true? How far will society unravel before someone in charge begins to question the received wisdom?

Let's hope their learning curve is short.

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## 20. PIPE DREAMS

Despite forecasting an oil supply crunch and soaring prices, industry watchdogs are sticking to the line that production can go on rising

David Strahan  
The Guardian,  
Wednesday December 3 2008

You can imagine the internal contortions when an old friend was once memorably described as a 60s liberal with Catholic guilt. I got the same impression of grinding gears while reading the International Energy Agency's latest long-term forecast, the World Energy Outlook 2008, published last month. In many respects, the IEA's analysis of threats to the oil supply is bloodcurdling, and yet the agency maintains that global production can keep rising for at least two decades. The rich nations' energy watchdog is clearly alarmed, but seems afraid of its own bark.

The IEA's annual forecast has become steadily darker in recent years, but this time the deterioration in its outlook is dramatic. Only a year ago, the agency was predicting that global oil production in 2030 would reach 116m barrels per day, up from around 84mb/d, but now it has slashed that to 106mb/d.

At the same time, the agency has also doubled its oil price forecast. Last year, it said the cost of crude would fall in the long term, but now it predicts an average of \$100 per barrel until 2015, despite the deepening recession, and rising to \$120 in real terms by 2030. It concludes that the era of cheap oil is over and that the recent extreme price volatility will continue.

### Temperature rise

If that sounds like good news for global warming at least - as the UN climate talks take place in Poland - the IEA warns that its new "reference scenario" would still mean a devastating 6C rise in global temperatures.

One reason for the deeper pessimism about oil is a new analysis of the rate at which output of existing fields declines due to falling reservoir pressures - an inevitable feature of oil production. This number has always been difficult to estimate, but now the IEA has done a detailed study and has concluded that the global average decline rate for fields that have already peaked is 6.7% per year, much higher than previous estimates and in spite of billions of dollars of remedial investment.

That means that, to satisfy the IEA's predicted demand growth of 10mb/d day by 2015, the industry must build 30 mb/d of additional capacity. It is as if the oil industry is struggling up a sand dune, constantly slipping back, forced to scramble three steps to make the distance of one.

The IEA says the challenge of raising oil production is made even harder by the recent collapse in the oil price - from a record high in July of \$147 per barrel to around \$55 - because many planned oil investments are now uneconomic. News of projects being delayed comes almost daily, creating the conditions for an even bigger price spike whenever the economy recovers. The report warns that "there remains a real risk that underinvestment will cause an oil supply crunch [by 2015]". This would pitch the world back into recession, with all the economic and social misery that implies.

But as alarming as it sounds, the IEA view is almost certainly far too sanguine. The agency maintains its feared "supply crunch" could be avoided if the industry would invest enough, and if Opec countries, with three-quarters of the world's reserves, would only be reasonable. It insists that there is no geological shortage of oil in view ("peak oil"), and that output should continue to grow to 106mb/d in 2030, even though that would mean building new production capacity equivalent to six times that of Saudi Arabia today. Yet all this depends on a series of highly optimistic assumptions that fundamentally undermine the IEA's conclusions.

The first is that there is even the remotest chance the necessary investment will happen in time, now that projects are being delayed from the US to the Middle East. The IEA's "real risk" of a supply crunch is more like a racing certainty.

The second assumption is that steep declines in non-Opec oil fields will be offset by increases in "non-conventional" oil production, such as the Canadian oil sands. This also looks unlikely. Oil sands projects are uneconomic at less than \$80 per barrel, and several have recently been shelved. More importantly, they require vast amounts of water, and this is likely to limit output to about 3mb/d, whereas the IEA is counting on twice that much by 2030. The third is that Opec will ramp up its production, which the IEA says is crucial to satisfying demand "in the face of dwindling resources in most parts of the world and accelerating decline rates everywhere". But if the rest of the world is running out, it makes perfect sense that Opec members should want to husband their resources.

#### Upward revisions

More specifically, the agency assumes that Iraq will triple its output to 6.4mb/d. The country almost certainly has the geological potential, but what it will actually be producing in 2030 is anybody's guess.

Fourth is the assumption that Opec's oil reserves are anything like as big as its member countries claim: 935bn barrels. There have been severe doubts about this ever since the 1980s, when many members made huge upward revisions, which most observers regard as largely bogus.

The IEA has gone some way to addressing this by employing independent estimates, which are somewhat lower than Opec's claims, but their numbers could still be some 250bn barrels too high. PFC Energy, a Washington-based consultancy, has concluded that, on a more prudent estimate of Opec reserves, its output could peak by the middle of the next decade.

With so much apparently unjustified optimism, the danger is that the IEA's supply crunch turns out to be something even worse: peak oil, or as near as makes no difference. If the IEA were to moderate its assumptions, its outlook would come into line with the view of several major oil companies. Oil and gas company Total has said the global output will never exceed 95mb/d, for a mixture of geological and geopolitical reasons, while Shell forecasts a plateau from the middle of the next decade.

The distinction may seem subtle, but the difference is crucial. One view allows for the resumption of economic growth, while the other admits some kind of hard production ceiling that condemns us to alternating oil price spikes and recessions until we liberate ourselves from oil dependency.

The question remains as to why the IEA persists in its view. Perhaps it is just the innate conservatism of an international bureaucracy funded by western governments, or maybe the agency fears a diplomatic rift with Opec, or possibly it wants to avoid panic. Or maybe it hopes policymakers will read between the lines.

- David Strahan is the author of *The Last Oil Shock: A Survival Guide to the Imminent Extinction of Petroleum Man*. Details at [lastoilshock.com](http://lastoilshock.com)

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