

The BRC Energy and commodities bulletin

September 2007

Issue 1 Volume 1

Bi-monthly review of energy and commodity trends and research for users and producers of energy in Ireland

Is ethanol still a good investment?

This month's issue:

Bioethanol in focus

Just how important is the price of oil?

Plus: Regular energy and commodities analysis



Bio-resources Research Centre, UCD

Contents

- National news roundup
- International market news
- Rory Deverell's evaluation of the economics of ethanol production
- Also, the link between oil price, interest rates, inflation and stock markets are discussed

The BRC Energy and Commodities Bulletin is a monthly publication produced by staff and researchers in Bioresources research centre (BRC) in University College Dublin. The BRC is a dedicated research centre of excellence that focuses on environmental research with particular emphasis on renewable energy.
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Editors note:

Welcome

Rory Deverell
Editor:
The BRC Energy and Commodities Bulletin

Welcome to the first ever edition of the **BRC Energy and Commodities Bulletin (BRC-ECB)**. The BRC-ECB endeavours to help all those who wish to keep abreast of trends in energy research, prices and availability in all its guises to do so on a regular basis in an as objective a manner as possible.

We live in an age where energy is no longer measured solely in dollars per barrel but now also in bags of pellets, litres of ethanol and tonnes of rapeseed, although crude oil remains the reference value against which all other forms are compared and will continue to do so for the foreseeable future.

As Ireland tries to unlock the grip that fossil fuels have historically had on supplying our energy needs real debate is needed on our energy future and facts should form the basis of those debates. UCD's Bio-resources Research Centre (BRC) along with other bodies in particular Teagasc have long been researching the role of alternative energy sources long before it was "sexy" to do so and in so doing has built-up a core understanding of the various technologies that exist. Unfortunately, much of the research conducted is published in scientific journals far from the eyes of those who could best use it: the business people and entrepreneurs of our Island. Therefore, another role of this bulletin is to make available current research conducted by the BRC and wider research circles to those who can best see commercial scope behind the facts and figures.

So, please read on and get informed, for the best decisions are those based on facts.



National and international news:

Feed and seed prices up

According to the CSO the costs of feedstuffs and seed were up 11.5% and 7.1% respectively for June, this was on the back of modest increases in grain prices at the time. This rate of increase has increased since then so expect further rises as the statistics are released. CSO

Gas and electricity prices are set to decrease

From the 1st of October Gas prices will decrease by 11.5% while electricity prices will decrease by 5.4%, 5.9% and 10% for domestic, small business and medium business respectively. CER

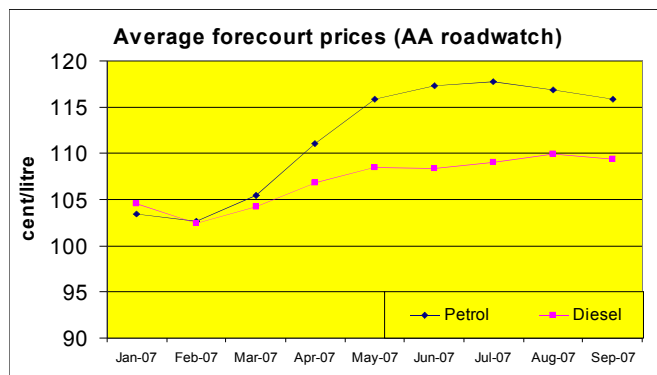
Grain prices hit record levels

As world markets for grain shows ongoing bullish behaviour, in particular for wheat the Irish grain markets are also seen to be reflecting that market sentiment. Green wheat prices is trading around €190-210 per tonne while dried prices are around the €265/tonne mark. For anyone considering ethanol production this will equate to a €0.69 /litre feedstock cost, US corn on the other hand only costs about €0.28 /litre for a US ethanol producer.

Rapeseed at 9% moisture content has been traded around the €285 /tonne mark, when compared to the Euronext nearby futures values of around €350/tonne it seems a little under-valued at present. While plantings in the state are expected to increase for the coming season, winter wheat seed is in short supply with quality issues also evident and may curb some of the expected growth in area and yield next harvest. Also, winter oilseed rape plantings are reported to be back 10-15%.

Little change in pump prices

The average national petrol and diesel prices showed little change over the past month despite crude oil hitting record highs. The average petrol price in September was 115.9c/l down 1c/l from August while the average diesel price was 109.4cent/l, down 0.5cent from August.



Crude oil prices hit record highs

Crude oil prices hit record highs in nominal terms in September with prices on futures exchanges almost hitting the \$84/bbl and closing over the \$83/bbl for the first time.

Carbon markets - same story different month

The EU emissions trading scheme for 2007 has not recovered from the initial collapse last April with prices per EUA now well rooted around the 8 cent mark. EUA's for December 2008 however are in around the €20 to €21 euro mark.

Euronext grain prices hit record highs

On the Euronext futures exchange wheat, rapeseed and corn all hit record highs in September with November feed wheat contracts reaching €279/t early in the month before softening back to €267/t by the months end. Rapeseed futures for November showed steady increases to close the month at €360.50/t while corn had a high of €265/t early in the month before steadily easing back to €235/t.

The high closing prices seen are a reflection of the poor harvest experienced across much of the EU with uncharacteristically high temperatures in eastern and central Europe and equally uncharacteristically wet weather across much of the north and west. Which lead to yield and quality loss among maize and wheat producers. EU grain production estimates have been lowered to 256.5m. tons due to lower than expected output from France due to the wet weather and in drought effected Bulgaria, Hungary and Romania.

National and international news:

US wheat prices heat up

In the US, wheat prices are up around 47% since the first of August on the Chicago board of trade. This reflects both the increase in corn plantings last Autumn at the expense of wheat and soya and also the export demand, particularly to Europe. Although this may be curtailed somewhat by the very high freight costs that now exist. This years US maize harvest is set to be the largest ever and this is reflected in the corn price at the moment although they have increased by 15% since August. The increase in corn prices, although moderate in comparison to other grains is significant for ethanol producers, especially as ethanol prices are at very low values currently putting huge pressure on US ethanol producers.

US ethanol prices continue to slide

Ethanol prices on the Chicago board of trade have continually slid in value since the end of April falling in value from around 40 euro cent per litre to less than 29 euro cent per litre. The weak prices are reflecting the growth in ethanol production, the lower demand (summer driving season is over) and the shortage of infrastructure to distribute and blend ethanol into gasoline.

World grain consumption on the increase

World-wide, grain consumption is set to increase by 46m tonnes this year which is greater than the rate of increase in production expected, this will more than likely erode carryover stocks further. While this is in part due to biofuel expansion other more important factors behind any supply deficit would appear to be cuts in output among major cereal producers (Australia and the EU) and also increased demand (China). While Australia's production is predicted to increase on last years drought depleted harvest of 9.8m tonnes to about 15.5m tonnes, this is still 10m tonnes short of capacity. Ethanol production in the EU will require less than 3% of wheat and maize, while in the US, corn for ethanol will account for about 25% of corn production or 21% of total cereal production.

The EU drops set-aside

The EU has set the set-aside area at zero for the Autumn 2007 and Spring 2008 plantings. This will free-up 4m ha for the harvest in 2008. The EU agriculture minister Mariann Fischer Boel has also proposed that the EU totally suspends cereal import tariffs for the current marketing year which ends next June. This is probably a response to both the high prices within the EU and the high dry-bulk freight rates that are making exporting grain to the EU less attractive.

Financial markets

In the financial world there appears to be considerable uncertainty where individual economies are going, in particular the EU and the US. While in the EU the ECB will struggle to contain the dual threats posed by inflation, particularly with current high oil prices and also the other threat posed by a slowing economy resulting from the strengthening of the Euro against the dollar and stock market slumps. Closer to home the ISEQ index of Irish share continues its steady decline over the past few months bucking the trend of the larger indices, the DOW, NASDAQ and FTSE who have all recovered after last months dips. This probably reflects the lack of confidence in the Irish banking system who account for about 40% of the indexes value and the also a lack of confidence in the wider Irish economy generally.

Other news:

- British sugar, BP and DuPont have launched plans for a huge ethanol plant in the UK that will produce half a billion litres of ethanol and butanol from wheat.
- The CSO agricultural price index for July shows a seasonally adjusted 1.8% increase in output and a 0.9% increase in input costs, adding 0.9% to the terms of trade for the sector.
- Irelands national allocation plan (NAP 2) for the EU ETS has been approved by Brussels and the emissions ceiling is now set at 21.15 million tonnes annually and will be allocated between around 100 large businesses within the state. This represents a 6% reduction on NAP 1.

Just how does the price of oil affect economies?

Crude oil is the benchmark against which all energy is compared, if crude oil prices are high, the cost of energy generally is high. As in any open market the fundamentals that define the price of oil at any given time is supply and demand. On the demand side there is a clear link between economic growth and the growth in the demand for oil, so interest rates and stock markets are also linked to the price of oil. Generally, supply issues aside, strong economic growth among the main consumers (the US, EU, China) results in a higher oil price.

If economic growth were to grow too fast leading to a rate of energy consumption that was equally growing too fast one would see the price of oil grow to such a point that it becomes inflationary upon the rest of the economy. As interest rates are one of the main means of controlling the rate of growth within an economy they will be the first tool employed to control such inflation. What we are experiencing at the moment is a very delicate situation where many lending institutions in Europe and the US have got their hands on cheap money thanks to low interest rates among the central banks and are in financial pressure because high risk borrowers are not in positions to pay back the loans. The simple solution to this problem is to drop interest rates further thus relieving the pressure on the aforementioned lending institutions. However, this in itself will instigate greater growth in the wider economy, as can be seen by the rise in stock market values around the world when the US dropped interest rates. This economic growth is now starting to impact on the price of oil which will soon start to impact on the price of goods and services and ultimately inflation, the only cure for that being hiking up interest rates - putting pressure back onto the banks.

The ECB on the other hand is trying to curb inflation by increasing interest rates, however, the weak dollar and slow growth is starting to hurt the economy and also the ECB doesn't know to what extent the sub-prime problem is embedded among EU lenders and would not wish to initiate a crisis like the one in the US, so expect the ECB to be rather coy over the next few months. Once the price of oil pulls back and the dollar strengthens expect interest rates to rise once again.

This all assumes that the supply of oil stays constant. What is also reflected in today's oil price is the risk associated potential supply disruptions, at the moment, the greatest risk would be posed by any hurricanes that venture into the Gulf of Mexico. So one might see oil prices ease back once the hurricane season ends in November - all other things being equal that is. It appears some level of stability is beginning to appear between the US and Iran, but supply was never really under threat, wars rarely disrupt oil supply as they are usually the one item of infrastructure that are spared. A bigger threat to supply would be the largest and most consistent producer, namely OPEC. The OPEC cartel accounts for over 40% of oil production worldwide and they will always play a balancing act between trying to achieve the highest possible oil price and keeping economic growth of their customers unharmed, chiefly the US, Europe and China. So expect oil output to increase if any of these economies show signs of a slowdown.

The price of oil has reached its highest value ever this month, the question then is why are we not experiencing a crisis like that in 1980? The answer is simply that the difference between the real and nominal value of oil. In real terms the price of oil was worth over \$100/bbl in 1980, while currently we are at about \$80/bbl, so one could say we are about 80% of the way towards a crisis!

Rory Deverell

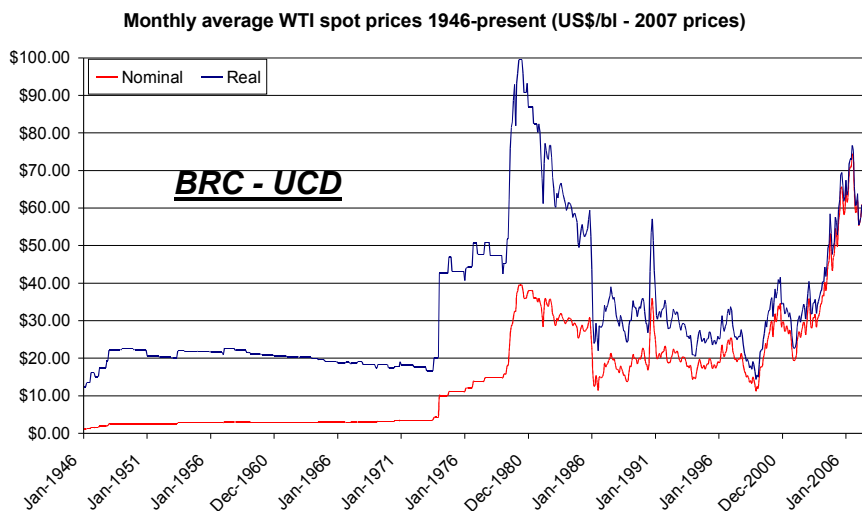
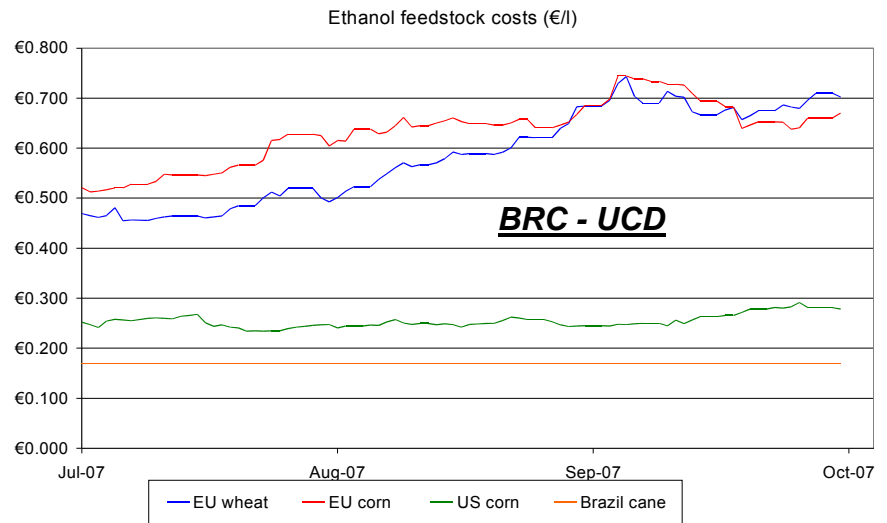


Figure 1: Crude oil prices since 1946 in real and nominal terms

Is ethanol a good investment?

Just last year the US ethanol industry was on a high, prices were the equivalent of €0.80 per litre, grain prices were reasonable and investors were recovering their costs within two years. Now, ethanol's value has halved while corn prices have increased despite the record harvest that is being saved.

However, as bad as things are in the US, any ethanol producers within the EU are under much greater pressure. The graph on the right shows the relative costs in euro cent per litre terms of EU ethanol from wheat and maize compared to ethanol from US corn and Brazilian sugarcane. There is clearly a diverging gap in competitiveness at the moment.



If market dynamics were allowed to play out then one would find that we shouldn't be producing ethanol at all, however, this is not a normal market situation. First of all there is a 19 cent per litre import tariff into the EU itself and second of all even within the EU member states there are internal supports for ethanol producers. However, at current prices ethanol production is costly and largely less competitive than petrol. For example, if one were to build an ethanol plant and have it running tomorrow it would cost about 94 cent per litre to buy Irish wheat and convert it to ethanol and sell it with 21% VAT not including any margin for the producer. The sale of distillers dried grains at current prices are equivalent to about 15 cent per litre and this would appear to be the only real income to the plant. Given that even a one cent margin per litre for a 100 m litre capacity plant results in a €1 million profit, breaking even with the ethanol fraction is not justifiable. So, in order to find a market to sell ethanol the producer will have to at least be as competitive as petrol. In order to quantify this a comparison based on energy content is required as ethanol has an energy content which is about 2/3 that of petrol which will be reflected in the fuel consumption of the car. At 94 cent per litre ethanol works out at about 4.45 cent per mJ while petrol at 116 cent per litre works out at 3.68 cent per mJ. In order to be competitive with petrol it will need to be sold at 78 cent per litre, for this to happen it would require a maximum dry wheat price of €205/t.

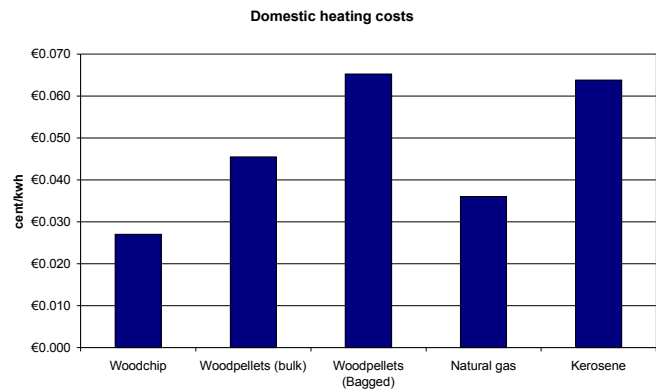
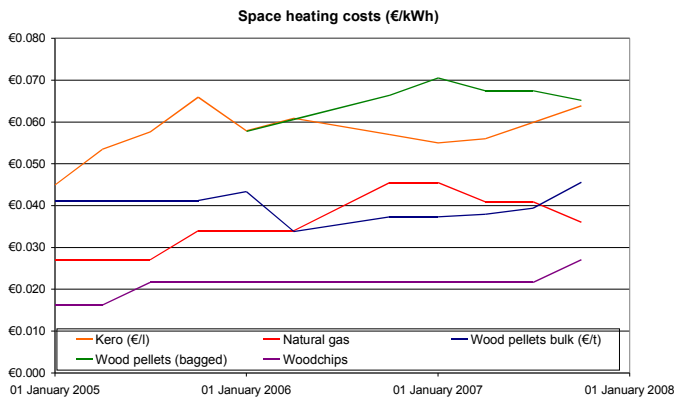
Of course to make ethanol competitive the government could drop the VAT but this would hardly be sound policy even considering all the expected benefits, not least getting the EU off their backs in relation to the biofuels directive. If the EU were to drop their cereal import tariffs ethanol producers in the EU could benefit from the favourable exchange rates and import maize from the US for less than €200/t cutting their feedstock costs by about 20 cent per litre, this would lead to a cut in grain prices across the board, not only for ethanol producers.

If this situation were to arise one would probably see a shift in competitiveness towards the European ethanol producer who benefits from the weak dollar, high crude oil prices and also much higher fuel taxation of petrol and diesel adding to ethanol's competitiveness. The US producer on the other hand will be competing against cheap gasoline, favourable export prices and rising costs.

So, is ethanol still a good investment? It's definitely a riskier investment than it was but in the current economic climate what isn't?

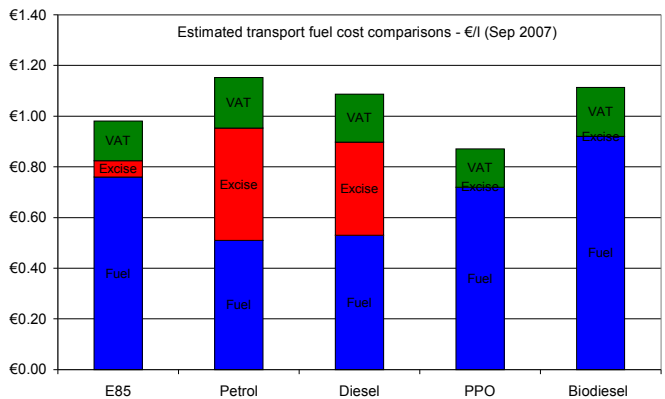
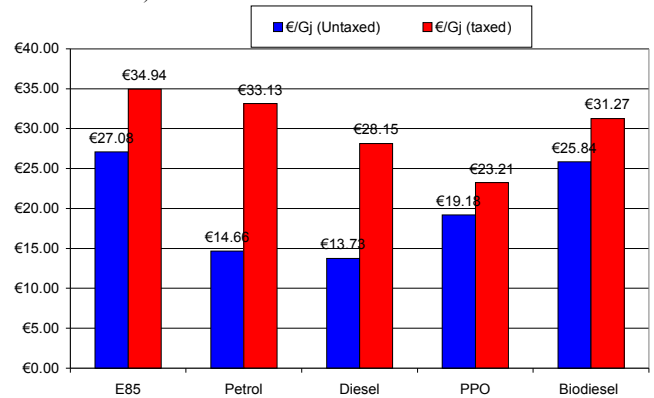
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Space heating cost comparisons:



Transport cost comparisons:

(Bio-diesel price estimated based on current rapeseed prices and estimated conversion costs)



About the Bio-resources Research Centre and the Energy and Commodities Bulletin

The BRC is a department within the Agriculture faculty of UCD. The department is at the forefront of research into alternative energy sources. The main areas of research include but are not limited to renewable energy research, food science and environmental engineering. The BRC has long built up a core understanding of the mechanisms through which agriculture can contribute to Ireland's energy security and the factors that act upon that potential. The goal therefore of this publication is to convey that information and understanding to those outside of academic circles.

The BRC Energy and Commodities Bulletin will initially run on a bi-monthly basis giving you up to date information in relation energy and commodity market trends and actors. The bulletin will also consist of the latest research ongoing both within the BRC and wider academic circles. So, if you have a relevant piece of research and would like to contribute to the publication please contact the editor, Rory Deverell. We hope you find this publication informative and useful and all suggestions regarding its enhancement would be much appreciated.

