# The BRC Energy and commodities bulletin

January 2008 Issue 3

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

# Review of the year: 2007

**Bio-resources Research Centre, UCD**

## Contents




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:


Rory Deverell
Editor:The BRC Energy and Commodities Bulletin


*2007 was a watershed for the public perception of agriculture and energy*

2007, as outlined in our review, was turbulent in almost every facet of the commercial world. The net result being a new plateaux in the cost of energy and virtually every commodity from oil to wheat to gold. A fact the economic world will have to adapt to. While the economic world faces into a recession the agricultural world is just leaving its own recession, the past ten years being the great commodities recession where little or no growth in the value of commodities existed.

This turning of the economic tables will see the importance of agriculture to the Irish economy grow significantly next year and beyond as its economic output grows in response to the aforementioned rising commodity values but also because the contribution of other industries, in particular construction, will diminish as national growth slows. Outside of the tillage sector other sectors within agriculture are also experiencing a more positive outlook with dairy benefiting from high milk prices and the the Beef sector benefiting from an EU wide ban on imports from Brazil.

This is a terrific opportunity to plan things correctly and develop an industry that is both efficient and robust so that when the good-times are over the industry will still be capable of sustaining itself. Core to this should be a diversification away from solely food production. Food is the great hedge when other stocks are low, after all, everyone has got to eat, but developing an efficient energy industry now while the sector is experiencing positive growth will see agriculture (and the state) benefiting from any future national growth and subsequent increased demand for energy.

# National and international news:

### *New EU proposal requires Ireland to cut $CO_2$ emissions by 20% by 2020*

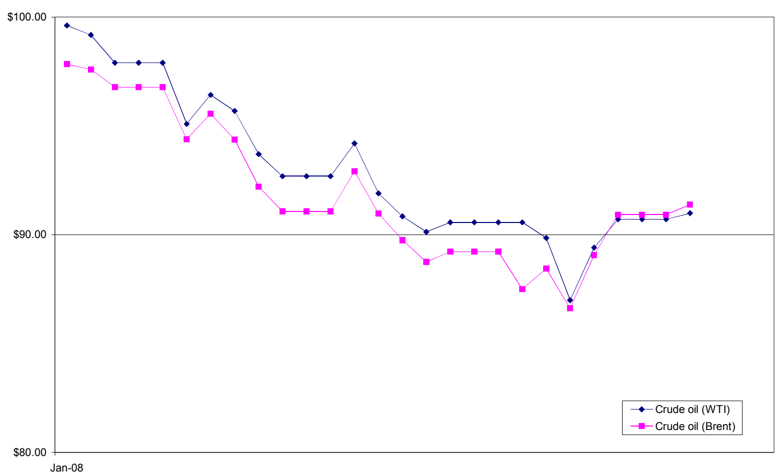
A proposal put forward by the European commission suggests that Ireland, along with Denmark and Luxemburg cut their emissions by the maximum 20% by 2020 compared to 2005. Other big emitters such as the Germany, France and the UK must cut their emissions by 14%, 14% and 16% respectively while less well-off countries such as Bulgaria can increase emissions by 20%. The allocation procedure was based on per capita GDP, of which Ireland has the second highest in Europe. The commission also proposes that Ireland supply 16% of its energy from renewables by that date. The Irish government is set to argue against this level of cuts based primarily on the argument that gross national income (GNI/GNP) at €150 billion is considerably less than Gross national product (GDP) which runs at €175 billion and should be the basis for which the allocations should be made. The good news for renewable energy investors is that the government is much more favourably disposed to the 16% renewable energy substitution target.
Sources: EC, Department of an Taoiseach

### Wheat and Maize production estimates for 2008 are up considerably on 2007

The international grains council estimates that the 2008 harvest will be up by 11 million tonnes on 2007 for wheat and up by 67 million tonnes for maize. This sees total production of grains rise to 1.7 billion tonnes although consumption looks set to exceed supply by 19 million tonnes, leading to further draw down of already depleted stocks. (Source: IGC)

### Oilseed prices continue rally then ease back

Since the northern hemisphere harvest the price of the main three vegetable oil sources have risen considerably and unabated until January 14th when cooling oil prices and biodiesel demand put a stop to their gallop. Rapeseed on the European MATIF traded just over €420/t (€423/t on Jan 29th) from a high of €450/t, Soyabeans in the US will trade for no less the equivalent of €300/tonne (€312/t on Jan. 29th), back from a high of nearly €330/t. While crude palm oil clear in freight Rotterdam started the new year around €0.59/l and will close January over €0.60/l at around €0.63/l. Crude palm on the Joint Asian derivatives exchanges (JADE) values CPO at over $920/t (€0.51/l).




### Single trade makes history

A lone trader made history January 2nd by buying the minimum contract of 1000 barrels for $100,000 or the magic $100/barrel. He quickly sold his little investment again, the total transaction costing him $600 dollars. The $100 dollar barrier was broken briefly again two days later, albeit under more genuine circumstance. The market has since seen oil drop considerably on the back of falling equity values on the major stock markets, increased US stocks and the looming threat of a US recession. The price of WTI fell to a low of $89.99/bbl on January 23rd before recovering slightly and looks set to close January just above $90 a barrel.

### DCMNR launch extensive grant scheme for CHP

The DCMNR have published application procedures and guidelines for grants worth up to 30% of the cost of installing medium to large scale CHP using agri-based biomass feedstock (no MBM or waste). The grants supports projects using combustion or anaerobic digestion methods of heat and electricity production from biomass. The maximum award is €1.5million euro and the total budget is €5-8 million euro, so at least 6 projects will be funded. For more details go to www.dcmnr.ie or www.sei.ie.

## National and international news:

### European wheat and corn rebound, rapeseed stabilises

Liffe nearby futures for feed wheat look set to close January at or near €250/t at current €/£ exchange rates, this is up from a post-harvest low of €204/t set in mid November. Looking to next harvest the November price for feed wheat is around €205/t (current exchange rate) which indicates a green price of in or around €180/t, coupling this with rising fertiliser and chemical costs should see a considerable drop of farm level margins for the coming year. The BRC estimates winter wheat production costs (green) will be €139/t (based an a 9t/ha yield), up from €98/t last year with a subsequent drop in gross margin from €107/t to €41/t or 66%. The Bearish factors affecting these prices in the coming months would be an increased (record) worldwide cropping area for the coming season while bullish factors would be an increase in the Soybean acreage in the US at the expense of wheat and corn but expect the weather to have the final say.

Source: Liffe commodities

### Ocean freight rates drop considerably

According to the IGC ocean freight rates, especially for the larger Capesize vessels have fallen considerably. This is attributed to reduced demand worldwide with a slowdown in mineral movements. They do say however that the handysize vessels (used in intra-European shipping) have remained comparatively firmer.

Source: IGC

### US ethanol prices rebound

Since November US ethanol on the CBOT has rebounded from year lows in September of less than €0.30/l to around €0.40/l at present. The Brazilian price of ethanol on the BM&F is trading around €0.31/l. The EU price trading out of Antwerp is around €0.55/l.

Source: www.ethanolstatistics.com, industry

### Worldwide equity markets remain extremely volatile

Since October worldwide share values have fallen considerably: (as of January 27th)

| | | |
|---|---|---|
| ISEQ: | down 14% | Ireland |
| Dow Jones: | down 11% | US |
| FTSE 100 | down 11% | UK |
| Hang seng | down 16% | Hong Kong |
| Nikkei | down 16% | Japan |
| Dax | down 14% | Germany |
| CAC | down 15% | France |

All markets remain extremely volatile and are reacting to almost any economic data that ventures out of the US. The US federal reserve are predicted to cut interest rates further from 3.5% after a previous cut of ¾ of 1 percent last week.

Source: Yahoo™ finance

### Aitricity sold to UK electricity firm

Airtricity, the large wind energy company formerly owned by NTR has been sold for 1.1 billion euro. The US operations were sold some months earlier to German energy giant E.ON while its European operations were sold in January to Scottish and southern energy, Britains second largest electricity generator. National toll roads owned 51% of the company (for which they paid €4.19 million in 1999). While founder Eddie O’ Connor owned 4% he may not actually be all that happy despite netting €50 million given that he had launched his own buyout proposal which was rejected by NTR in favour of Scottish and southerns proposal.

### Carbon markets ease back

Since the new year carbon markets have softened considerably from around €24/EUA to just over €20/EUA. Source: point carbon

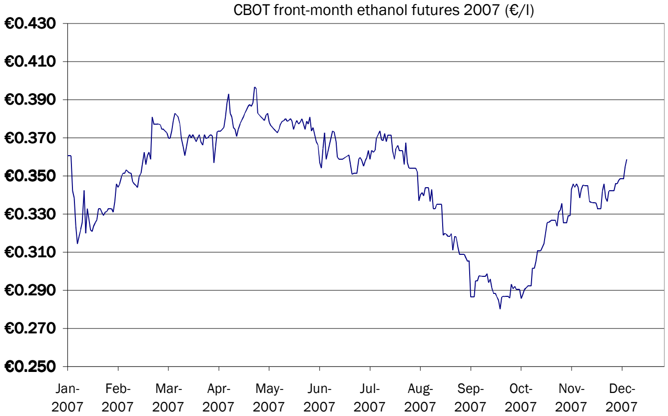
# *Taking stock of the crazy year that was 2007*

*2007, what a year! At times it was hard to draw breath it was so turbulent. The value of grains were on steroids from June onwards, the dollar deflated quicker than Hindenburg and the Irish stock exchange was as about as good an investment as chocolate fireguards. There is no doubting that fundamentally the way we value food and energy now is infinitely different thanks to the actions of the past 12 months. In this report we will try to give a quick synopsis of what a year 2007 was for the energy and commodities sectors and discuss where renewable energy might stand now in this new world we live in.*

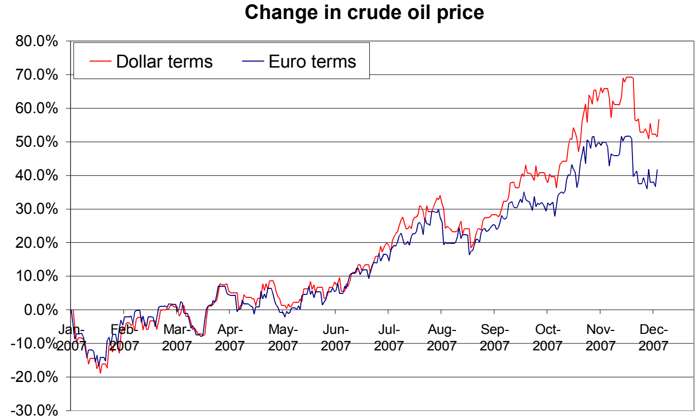
In relation to the value of energy and commodities 2007 was a year of two halves, the first 6 months were relatively benign, especially when you compare it to the second six months of the year when crude oil prices jumped 40%, the dollar devalued by 10%, and the price of wheat (and most other cereals) jumped 70% (see tables below). Add to the mix a 30% drop in the value of Irish shares traded through the Irish stock exchange and you can see how unique a year it has been.

Its an ill wind the blows no-one some good and thankfully the beneficiaries of all this apparent madness has been the long suffering farmer who has eventually seen the value of his produce catch up with other commodities after literally decades of static prices in nominal terms and falling values in real terms. The humble tillage farmer didn't have it all his/her way, the weather was in some cases disastrous with rain causing havoc with harvesting, especially for winter crops. Spare a thought also for the Australian, Eastern European and British farmers whose harvests were in some cases were non-existent due to either droughts or floods, the only country to really reap the benefits of 2007 relatively un-hindered was the United states who had the largest harvest since the war. The bio energy industry in Ireland would have benefited mostly from higher energy prices although they may have to wait for their competitors to raise their prices as their is a considerable lag time especially in the electricity and gas markets.

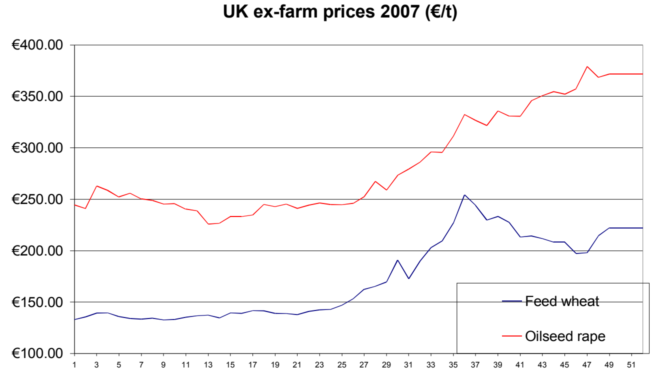
CBOT front-month ethanol futures 2007 (€/l)



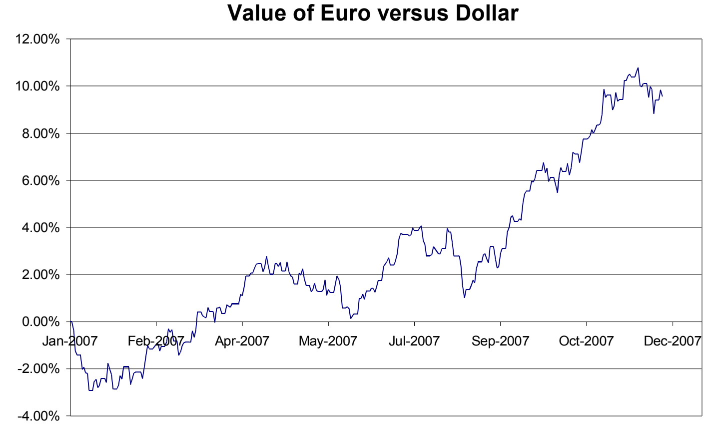
Change in crude oil price




UK ex-farm prices 2007 (€/t)




Value of Euro versus Dollar



Data sources: BRC records, Farmers weekly, CBOT, ECB, US DOE

Summer 2007, cloudy, wet and not very windy

On the renewable energy front one would have to begin with the sale of Airtricity. Just when the industry needed a success story to say  that yes renewable energy can be financially rewarding  on a corporate scale along came Airtricity. Airtricity was founded in 1997 by Eddie O' Connor and eventually sold by NTR in 2007 for €2.2 billion (US followed by European divisions). Over the 10 years the company went from a value of €8million euro in 1999 when NTR came on-board to  €2.2 billion, representing a growth in value of almost ¼ billion euro per year! All this was archived with a backdrop of a government that could almost be described as anti-wind.

So, what about the other sectors? A lot of US and European ethanol projects were put on hold as grain prices rose and an undercurrent of bad publicity began to shake investor confidence. The US producer, on some occasions dipping into negative returns as grain prices peaked and ethanol demand waned (which is very much dependant on RBOB prices). In Europe, Abengoa's Salamanca plant was shut down due to the high prices of wheat as was Suedzuckers plant in Germany. The European producer will always have the spectre of surplus petrol production in the block as a weight on petrol prices and therefore ethanol competitiveness, this may even be further exacerbated by continuing trends towards the use of diesel in 2008.  Like the US, a lot of other planned facilities were also put on the long finger. The plant oil people would have had much the same problems with oilseeds going through the roof and have, unlike other cereals, continued their price rise trends over and beyond the Christmas period. However, the value of the primary by-product (rapecake) adding considerably to the economics of crushing operations. Bio-diesel producers need vegetable oil prices to come down to be competitive with synthetic diesel, but grain producers need oilseed rape to be at least twice the price of wheat to be economical at their end, so it will be an anxious year for both parties.

An area with considerable promise is the woodchip for commercial heating, this sector, according to industry sources did quite will with the number of hotels etc. making the conversion to biomass instead of oil steadily building. Growing willow to meet the demand is coming to be more of a reality as the demand for woodchips grows and the chicken and egg argument slowly erodes. Although, the agricultural sector most likely to make the change to growing long-term energy crops such as willow would have been beef producers who were in a very marginal industry of late just had a significant lift with the ban on Brazilian beef imports to the EU, so persuading those farmers to make the jump is going to be much more difficult from now on, grants greater than the current 50% will be needed.

In the domestic sector, the solar panel and woodpellet producers would have been encouraged by new requirements for the building industry to incorporate renewable energy into new buildings, its a pity that builders have stopped building. Bolting horses and stable doors springs to mind.

The all-island grid was brought on-line and electricity producers, in particular new entrants using renewable energy should benefit from the new market. The proposed cuts in Irelands CO2 emissions should also benefit any low carbon electricity entering the market as will the EU carbon market which appears to be holding up since the new session was launched on January 1st, with prices staying above €20/EUA, rather than the €0.11/EUA that existed in 2007.

Now for the weather....

According to MET Eireann it was the warmest year on record (1oC above average) in many places and it was the fourteenth year in succession that temperatures were above normal. Over twice the normal levels of rainfall occurred in many areas during the summer months and mean wind speeds for the year are described as being "exceptionally low", bad news for wind energy sector I suspect.

So what about 2008? Here are some not so bold predictions:

Grain prices will stay above average though will come back from 2007's highs, at least this is the impression the futures markets are giving with feed wheat prices for November '08 trading at €205/t compared to a high of €280/t at harvest time last year.

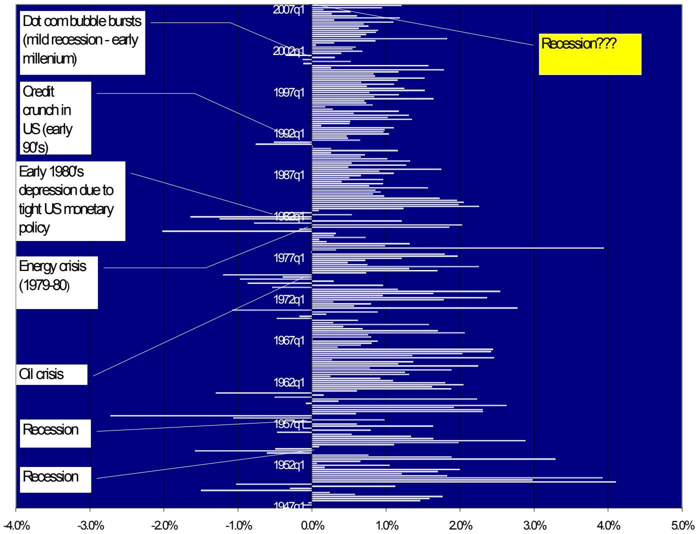
Oil prices will stay high (above $80/bbl) because OPEC will match output to any reduced demand resulting from a US recession. Speaking of which the latest report from the Bureau of economic analysis shows that growth in GDP for the last quarter of 2007 was 0.6%, which leaves the US teetering on the brink of such a recession. The official definition of a recession being two quarters of falling GDP. A timeline of US GDP is highlighted in the top figure which shows the growth in GDP for each quarter and therefore the various recessions since 1947. Based solely on this graph I predict the US economy will go into recession if for no other reason than its about time they did! This dubious prediction is also based on a little bit of analysis, the problem in the US housing sector is evident in two middle figures showing the fall new house builds (middle 1) and also house sales (middle 2) since 2000. However, according to the US census bureau construction spending actually increased 0.1% in the latest report (November). Another counter to falling house values was that the demand for durable goods jumped 5.2% in December after a few months of low or negative growth in demand (bottom figure). Many analysts believe that a recession is still inevitable however, and not being one to argue I will too. According to the IMF, every 1% drop in US growth results in a 1.75% drop in Ireland, which is a greater effect than a similar drop in the EU would have on the Irish economy.

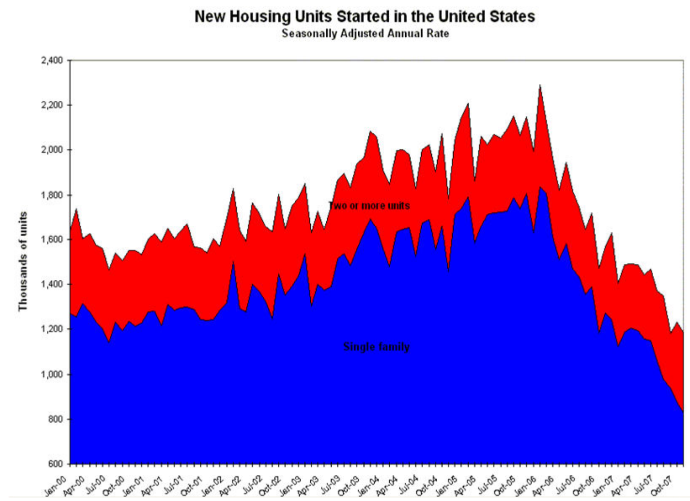
2008 will be tough for all concerned as we deal with unstable markets, increasing costs and slowing economies, but we will get over it as the graph on the right proves. A recession will just makes things harder, not impossible.

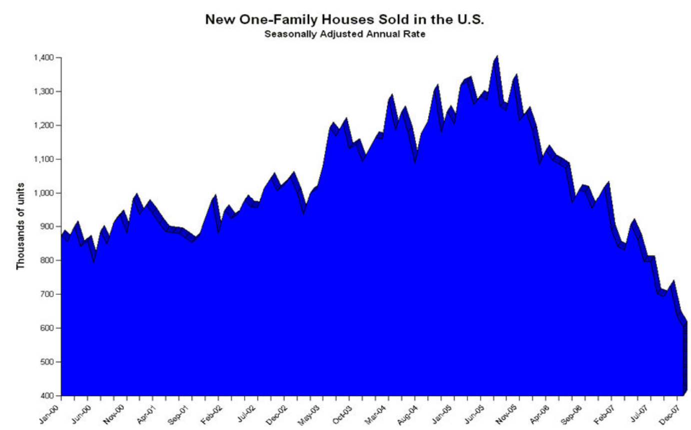
Happy new year.

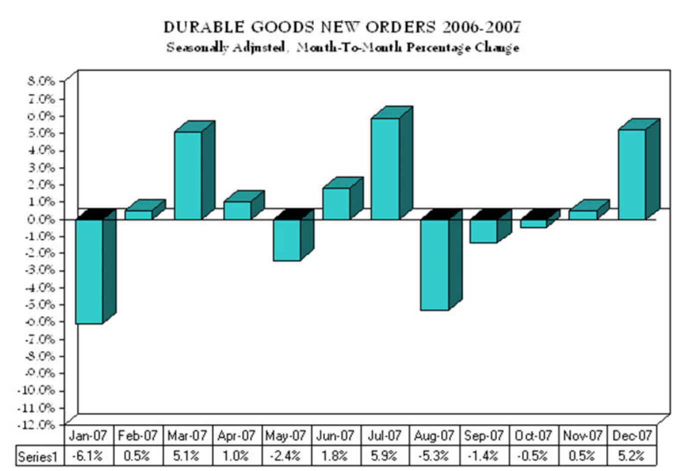
Rory Deverell and Peter Meahan

Data sourced from:
BRC database, FWI, US census bureau,
US bureau of economic analysis,
ISE, yahoo finance, CBOT, WTRG

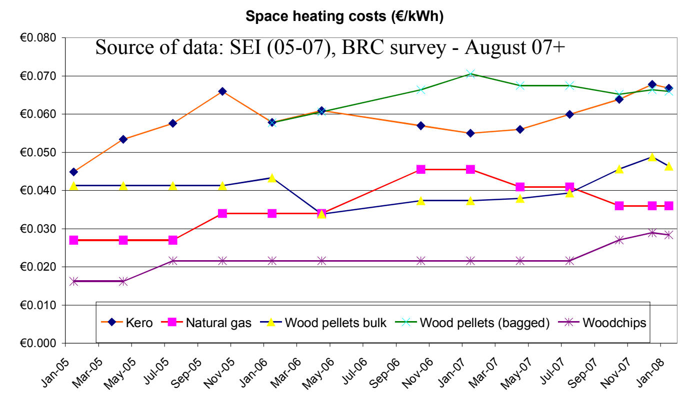


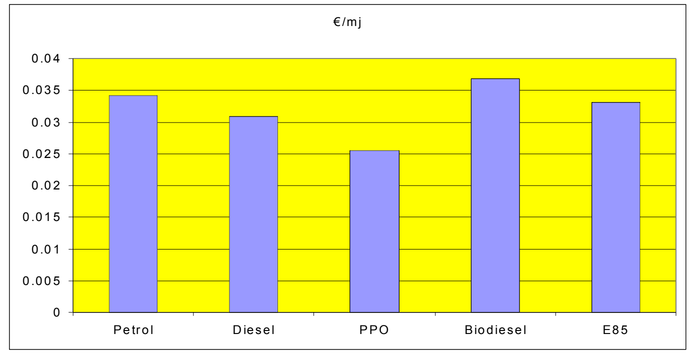



## Space heating cost comparisons:

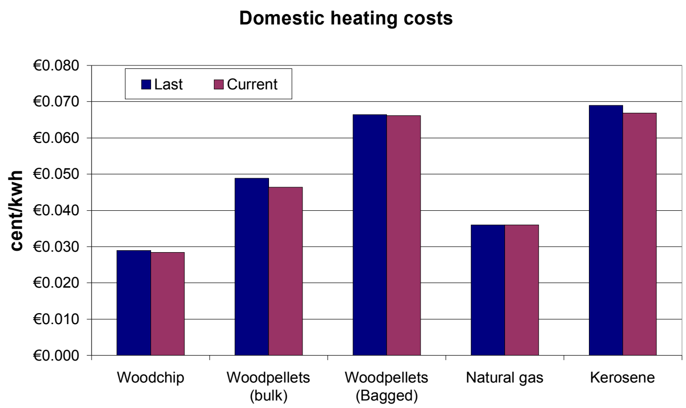


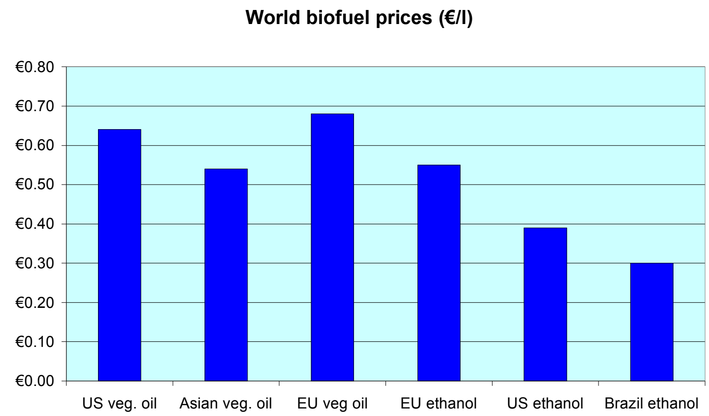

## Transport cost comparisons:

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




Due to limited suppliers of PPO and E85 and risk to privacy, prices will not be quoted on a per litre basis.




Prices based on averaged unit costs of (BRC survey):
Woodchip: €105/t, Woodpellets(bk): €225/t, Woodpellets (bd): €320.55/t, Natural gas: €0.036/kwh, Kerosene: €0.680/l

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

The Biosystems Engineering department is a department within the Agriculture faculty of UCD. The main areas of research include but are not limited to renewable energy research, food science and environmental engineering. Within the biosystems department is the Bioresources Research Centre (BRC). The BRC has long built up a core understanding of the mechanisms through which agriculture can contribute to Irelands 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 within and 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 the wider academic community. 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.

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