

# The BRC Energy and commodities bulletin

March 2008 Issue 4

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



## Sustainability criteria

A barrier to development or necessary safeguard?



Bio-resources Research Centre, UCD

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- Front cover: "Burned jungle" Jamie Dwyer  
Source: [www.flickr.com/photos/74281168@N00/173937750/](http://www.flickr.com/photos/74281168@N00/173937750/)

## Editors note:

Rory Deverell  
Editor: The BRC Energy and Commodities Bulletin

The *raison d'être* of biofuels are threefold: security of supply, GHG abatement and the generation of wealth (particularly in the agri. Sector). The question is however in which order should they be arranged in degrees of importance? Ask anyone around during the oil crisis in 1979/80 and they will put security of supply at the top, ask any green party member and they will say that GHG abatement is top and finally ask any farmer and they will argue that generating wealth in the agri-sector should be paramount.

No matter what your persuasion you could not argue against biofuels as **potentially** having the means of satisfying all the respective stakeholders goals even if they do not at present. For this reason the EU have been pushing the biofuels agenda but now sustainability is becoming an increasingly pertinent issue. Adding sustainability criteria has serious implications for the industries growth and now may not be the time to introduce such criteria for several reasons. A biofuels industry is not just about the fuel, in fact the fuel is a small part of the picture when you take into account all the industries and infrastructure that surround it. Introducing stringent sustainability criteria now will work against biofuels produced under current technology in Europe which is seen as having a poorer GHG balance then for instance Brazilian ethanol leading to greater demand for those products at the expense of EU biofuels and thus limiting the capacity for the EU to develop the infrastructure/technology needed to accommodate better fuels such as second generation biofuels. On the other hand palm oil production at the expense of rainforests is an equally important issue and cannot be ignored.

To get an efficient industry off the ground will require some eggs to be broken and some stakeholders losing out but worse again is a directionless stalemate scenario.

The BRC Energy and Commodities Bulletin is a bi-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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## National and international news:

### Rotterdam biofuels throughput doubled

Throughput figures for biofuels in the port of Rotterdam doubled in 2007, compared to 2006. 1.2 million tonnes of biodiesel, as opposed to 250,000 tonnes, were handled, as well as 1.6 million tonnes of bioethanol (+0.5 million tonnes). In addition, 0.3 million tonnes of ETBE were handled. The Port Authority anticipates a further expansion and deepening of the market with several biofuel production facilities in the latter stages of planning or early stages of construction. The ethanol was generally coming from Brazil (40%) and France (10%) with other latin-american countries supplying most of the rest. Sweden (40%) and the UK (15%) were the main destinations. Biodiesel on the other hand was mainly sourced from the US (30%) the rest from Germany and the UK. The main destinations were the UK, Spain and France.

Source: Port of Rotterdam authority

### Rapeseed breaks the €500/tonne barrier

Carrying on from the Christmas rally oilseed price continued their precipitous rise to over €500/tonne on the case of oilseed rape on the Liffe exchange and and \$2.40/bu on the CBOT exchange for soybeans. This is also reflected in vegetable oil prices with CBOT soybean oil reaching the equivalent of €0.83/litre and JADE palm oil reaching €0.62/litre or over \$1000/tonne. All these commodities have since retreated by 10-15% since those highs were set in late February / early march. Analysts believe tightening supplies in response to a rain-hampered Brazilian soybean harvest and lower US output and increasing export demand primarily from Europe and asia will continue to drive these prices higher.

### Ethanol markets stable

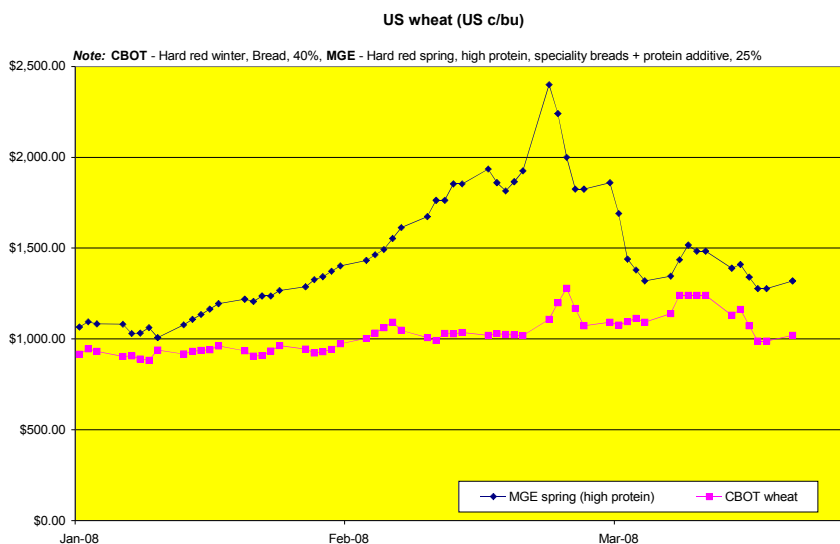
Ethanol traded through Brazils BM&F stayed around the equivalent of €0.33/litre price range over the February/March period. The CBOT ethanol price held course around €0.41/litre range, these prices should see EU ethanol port prices around the €0.54-0.55 ethanol price. Source: CBOT, BM&F, [www.ethanolstatistics.com](http://www.ethanolstatistics.com)

### Minneapolis spring wheat: the commodity story of the quarter

The Minneapolis grain exchange (MGEX) saw an unprecedented rally in its spring wheat futures contract price followed by an almost equally impressive fallback. The price rise began in the new year with fears that a severe shortage of grain was about to occur. This particular type of wheat in question is generally used as a protein additive or else used in the baking industry so it didn't impact too much on the soft wheat traded on either the CBOT or Liffe exchanges. The peak of nearly €2.50/bu set in late February equated to almost €600/tonne! Spot prices were even higher.

### Agricultural Input price index up 3.1% in January

The seasonally adjusted input price index increased by 3.1% in January 2008 compared with December 2007. The seasonally adjusted output price index decreased by 0.5%. Thus, the terms of trade index decreased by 3.4% in January. Comparing Jan. 08 with Jan. 07 sees fertilisers, feeding stuffs, energy and seeds up 23.1%, 19.9%, 17.4% and 6.9% respectively, while plant protection products were, surprisingly, down 0.4%. Source: CSO



# National and international news:

## Chinese inflation hits 7.1%

In what could be the first signs of the wheels coming off the worlds fastest growing economy Chinese consumer prices rose 7.1% in January, the highest level in more than a decade. The biggest price increase was unsurprisingly food at just over 18%. While this may seem an obscure detail for this bulletin one shouldn't forget that China is the price setter when it comes to commodities such as grains, coal and oil so the health of the Chinese economy is an important factor bearing on most global markets, some economists believe that double digit inflation figures are imminent. Source: Irish times

## ESB announce €22 billion investment

On March 27th the ESB announced a capital investment program worth €22 billion over the next 12 years, half of which it expects to invest in renewable energy technology such as tidal, wind and biomass. Six days earlier ESB international announced a €4 million investment in Marine Current Turbines Ltd. Who are about to install the first commercial tidal energy turbine in Strangford lock. The picture right shows the turbine being constructed at Harland and Wolfes factory in Belfast. [www.esb.ie](http://www.esb.ie)



## Crude oil breaks \$110/barrel

In mid-march WTI crude oil closed over \$110/barrel before falling below \$90/barrel 11 days later. The average crude oil price so far for 2008 is \$98/barrel compared with \$70/barrel in 2007 and \$62/barrel in 2006. The underlying reasons for the high oil prices are seen to be the weak dollar, Iraqi violence around major pipelines and OPEC's reluctance to increase production. [www.wtrg.com](http://www.wtrg.com)

## Carbon holds steady over €20/EUA

The value of EUA's held firm over €20/EUA and look set to close out the first quarter around €22. Source: point carbon

## Agricultures share of GDP fall below 2% in 2007

Year	Agri. GDP	Total GDP	% change total	% change agri.	Agri. Share total
2001	3,579	131,683			2.7%
2002	3,521	140,150	6.4%	-1.6%	2.5%
2003	3,568	146,219	4.3%	1.3%	2.4%
2004	3,740	152,467	4.3%	4.8%	2.5%
2005	4,097	161,498	5.9%	9.5%	2.5%
2006	3,817	170,760	5.7%	-6.8%	2.2%
2007	3,467	179,747	5.3%	-9.2%	1.9%

While the economy grew by 5.3% in 2007 the agriculture sector contracted by 9.2%, agricultures share of total GDP fell below 2% to 1.9%. Will agriculture recover in 2008?

Source: CSO (these are provisional outputs)

## US corn plantings expected down for 2008

The USDA announced today that US corn plantings will be down for 2008. The move from corn is in response to high wheat and soybean prices as well as farmers looking to return some rotation to land tired of continuous corn production.

The first quarter ABARE Australian commodities report highlights very well the reasons behind current market price rises and volatility. On the bullish (price rise) side they argue that seven driving factors such as government biofuel programs, high input costs etc wil drive prices higher in 2008 while bearish (price fall) drivers number only two; "advances in technology in agricultural production" and "other improvements in agricultural productivity". [www.abareconomics.com/publications\\_html/ac/ac\\_08/a2.pdf](http://www.abareconomics.com/publications_html/ac/ac_08/a2.pdf)

# ***Biofuels - The sustainability issue***

***Two EU directives propose requirements that the sustainability of biofuels be measured with minimum levels to be achieved. The NGO's want more the agri/energy sectors want less. So what are the facts and how will they impact the biofuel and wider agricultural sector?***

There are two EU directives that look set to make or break the biofuels industry in Europe. The first is the existing fuel quality directive 98/70/EC and the other is new proposed EU directive called the renewable energy directive.

## **The fuel quality directive**

The fuel quality directive does what it says on the tin, it is a directive that stipulates the minimum quality standards that fuels used in the EU must adhere to, such as sulphur content in diesel or vapour pressure limits on petrol. The directive is being amended primarily because the original directive only allowed for blends of a maximum of 5% of either ethanol or biodiesel in petrol or diesel through indirect limitations such as vapour pressure limits in the case of petrol and ethanol blends. The directive should benefit biofuel producers by allowing higher blends of biofuel to be contained in petrol and diesel. However, there is a requirement for GHG lifecycle analysis (LCA) to be conducted on all fuels with a 1% reduction in life-cycle greenhouse gas (LCGHG) emissions every year for the period between 2011 and 2020. Representing a total 10% reduction in GHG emissions from the transport fuel use over that period, this is contained within article 7a of the proposed amended directive. The reduction in CO<sub>2</sub> emissions can be met through greater efficiency of production or the use of those biofuels that have net reductions in CO<sub>2</sub> emissions compared to the fossil fuels being used. While on the face of it it appears to be a good idea given the EU's goals to reduce CO<sub>2</sub> emissions there are a number of problems foreseen by various lobby groups:

The refining industry is already covered by the EU emissions trading scheme and this they feel is encouragement enough to reduce emissions. This is a market mechanism in place that does not require burdensome GHG accounting on the processing related emissions that only account for 15% of the overall emissions associated with burning fossil fuels.

The ethanol industry (e-bio) believe that a shift may occur whereby the value of ethanol as a fuel will be less than its value as a CO<sub>2</sub> abater and under the EU's own definition Brazilian ethanol is considered to be around 90% efficient at reducing GHG emissions while EU ethanol is only 35-50% efficient at present and that member states would prefer to use Brazilian ethanol as opposed to EU ethanol and therefore stifling the industry and reducing the capacity to develop new technologies such as second generation ethanol.

The EU grain industry (COCERAL and FEDIOL) would also like to see the sustainability issue dealt with in the renewable energy directive as opposed to the fuel quality directive.

The EU commission would also prefer to see the sustainability criteria dealt with in the proposed renewable energy directive while most most MEPS and member states believe that the proposed renewable energy directive will not come in soon enough to prevent blenders using cheap socially and environmentally unacceptable biofuels being used and should be placed in the fuel quality directive which is much further along the bureaucratic process.



## The renewable energy directive

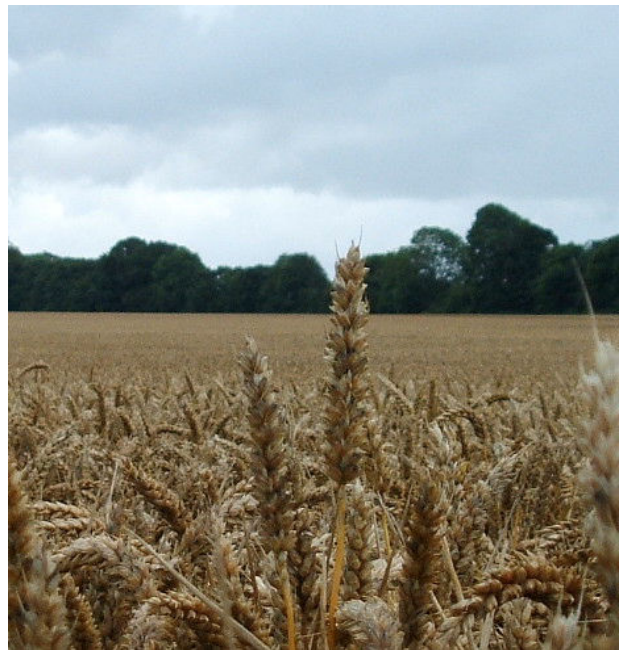
This proposed directive was first published on January 23rd of this year by the European commission and requires member states to:

Increase the share of renewables to 20% by 2020 compared to 1995 levels and have biofuels make-up at least 10% of transport fuels by that period.

From a biofuels perspective the 10% target has largely been welcomed, however, a much more contentious issue is the sustainability criteria attached to it, and in particular the method of calculating the sustainability in relation to GHG emissions. The basis of the sustainability criteria is that land-use changes occurring to facilitate biofuel production and also include all the direct emissions from that point associated with transport processing etc. the GHG savings much amount to at least 35% compared to fossil fuels. Many green lobbyists, NGO's and scientific members support this concept and would prefer even greater minimum targets (>50%) and also would like to include stipulations including social aspects such as working conditions of the feedstock producers.

Once the GHG emissions associated with a feedstock have been calculated a mass balance system is then employed to track its movements along the supply chain whereby the feedstock or biofuel as it is transported around the world and mixed with other "unsustainable" material (as inevitably it will) will have its mass as a percentage of the mix tracked at all times, so in theory the "sustainable" tonne of feedstock or biofuel should be tracked all along the chain to combustion. A more preferable option as seen by many in particular the EU grain industry is a "book and claim" approach whereby farmers producing potential feedstock sustainably can record that fact and sell the rights to the sustainable aspect of that feedstock without actually selling the feedstock to the biofuel producer, the biofuel producer on the other hand can be free to source feedstock material from any source and simply buy the sustainable title/credit from sustainable producers. This should reduce the book-work considerably and prevent hindering existing commodity supply chains also it will allow those farmers that, for whatever reason, cannot feasibly supply a biofuel plant with sustainable feedstock but can still be rewarded for producing a sustainable crop.

Of direct concern to Irish agriculture, in particular the Irish feed industry, would be the risk posed by the potential need for biofuel producers to use some or all of the co-products (namely dry distillers grains and soluble's (DDGS) and beet pulp) to supply energy to the plant through combustion in a boiler or CHP plant in order to meet the GHG related sustainability criteria. If this were the case the grain industry would see a substantial loss in feed sources not only from grain/land being redirected towards biofuel production but also losing any hope of using the co-products. Given the rate at which the US and EU biofuel industries are expected to expand this poses a considerable risk to both the feed and livestock industries. Having said that however, the value of for example DDGS as feed would be greater than that as a fuel at present, plus burning biomass for process steam production poses considerable technical problems from an engineering and design perspective. Also, the EU proposals for CO2 allocation allows processors to allocate the CO2 to bi-products based on energy content so already any bi-products help to improve the CO2 efficiency without the need to be burned.



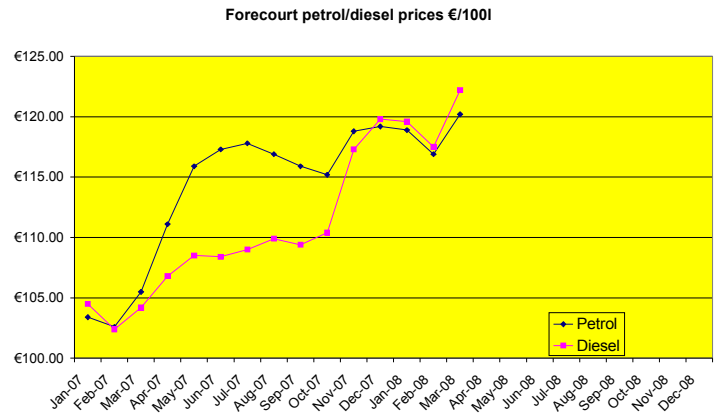
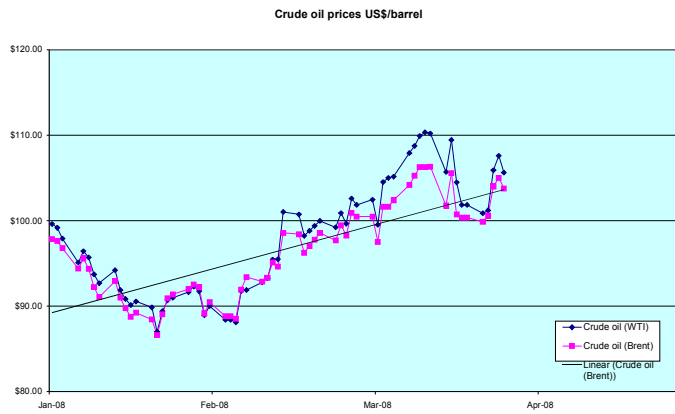
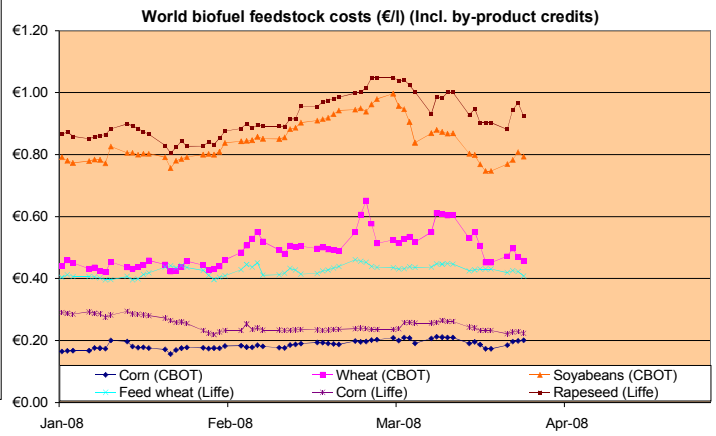
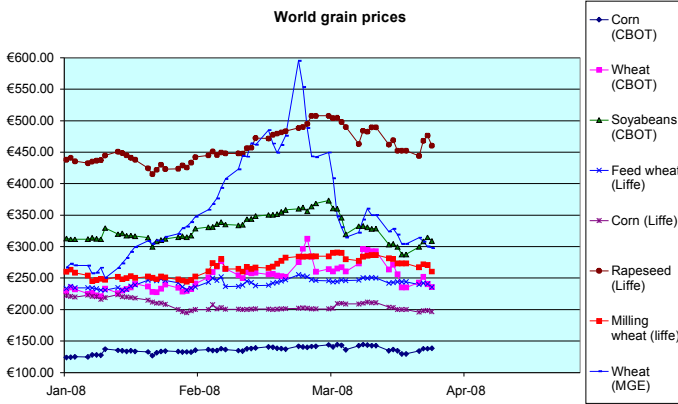
For more information check out the [www.euractiv.com](http://www.euractiv.com) for some excellent impartial overviews of the two directives. These exact pages include links to the proposed directives themselves and also related documentation:

### **Fuel quality directive:**

[www.euractiv.com/en/transport/review-eu-fuel-quality-directive/article-167990](http://www.euractiv.com/en/transport/review-eu-fuel-quality-directive/article-167990)

### **Renewable energy directive:**

[www.euractiv.com/en/energy/eu-states-handed-ambitious-renewable-energy-targets/article-169799](http://www.euractiv.com/en/energy/eu-states-handed-ambitious-renewable-energy-targets/article-169799)



## 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 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 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.

