

Running on Empty

The Biofuel Controversy

by Andy Wilson (October 2007)

In recent times, biofuels have frequently been heralded as the solution to the declining global supply of crude oil. Not surprisingly, the car manufacturing industry has been only too happy to add its support to the growing fantasy of 'eco-friendly' cars which are somehow 'good for the environment', if only the population would buy enough of them. Right across Europe, there is a headlong rush among governmental energy and transport agencies to promote both ethanol and vegetable fuel oils produced from field crops as clean, sustainable, viable alternatives to petrol and diesel.

Official EU publications predict a greater penetration by biofuels of the transport sector: increasing yields; more hectares of land under cultivation; technological breakthroughs in second generation fuels fermented from straw or wood chips... in fact one could be forgiven for thinking that we need not give the matter any more consideration as all the problems are already solved.

The reality however is somewhat different. At the end of 2005 I wrote an article for Local Planet in which I predicted that the EU 2005 target of 2 percent penetration by biofuels of the transport fuel sector would not be met. In European terms, even 2 percent is a

lot of fuel. Consumption of fuel in the transport sector is currently running at 360 million tonnes per annum. As it turned out, the EU failed to meet its 2005 target by a good margin. Not a good omen perhaps. The next EU targets for biofuels are for 5.75 percent penetration by 2010 and 10 percent by 2020.

Back in 2005, I also predicted the 2010 target would not be reached. Now, 2 years later, penetration has still to exceed 2 percent and even the EU commission itself has recognised the impossibility of their 2010 target being realised. Their latest prediction is that 5 percent penetration might be reached by 2013, a task now made easier by the addition of the huge agricultural expanses of Bulgaria and Romania.

The EU still expresses a hope that the biofuel penetration might reach 10 percent by 2020. Even if this extremely optimistic goal is achieved, one might well say: 'so what'.

Where will the other 90 percent of Europe's transport fuels come from? Unfortunately, there is still a perception that it is simply a matter of planting enough oilseed rape, sugar beet or wheat, and that any targets, no matter how ambitious, will be met.

EU Proposals

When one examines the EU propos-

als for 2020, one begins to get a sense of frightened officials and bureaucrats clutching at straws. True, the proposals also include plans to ferment straw and make it into ethanol, but they also envisage 15 percent of all the land currently used for food production being set aside for energy crops, and assume that it will be possible to increase yields of wheat (the principal energy crop) by 1-2 percent every year. Even then it is recognised that anything up to half of Europe's biofuels will need to be imported from producers such as Malaysia and Brazil.

Furthermore, there seems to be no allowance for the energy it will take to raise these vast prairies (17.5 million hectares, an area more than twice the size of Ireland) of energy crops. The energy needed to cultivate and process the crops into fuel will require an additional 5-6 million additional hectares of land. All this for one tenth of Europe's transport fuel requirements.

Leaving aside the issue of imported fuels for a second, a more realistic prediction is that Europe will *never* produce the equivalent of 10 percent of its current transport fuel requirements from indigenous biofuels, no matter how long it is given to succeed at this task. There is little likelihood of increasing yields without resorting to genetically modified crops. Even then, there are no guarantees. In Southern Europe, many harvests are poor this year as a result

of hot weather and low rainfall. Owing to the effects of global warming, this type of weather is likely to become the norm. It is debatable whether Europe can afford to set aside one sixth of its best agricultural land for energy crops, and sacrifice one fifth of its wheat harvest for ethanol production.

“Soybeans are Killing Us”

The dirty underbelly of the biofuel sector, however, lies outside the EU. In the US and Brazil, genetically modified soybeans are grown as an energy crop. It appears that all the EU legislation restricting food imports of genetically modified organisms into Europe do not apply to energy crops. In Brazil, Argentina, Bolivia, and Paraguay, monoculture soybean plantations are the main causes of rainforest destruction.

Indigenous territories have also been affected. The Enwene Nawe indigenous people in the Mato Grosso declared, “Soybeans are killing us.” At this time, some scant 429 Enawene Nawe people still survive. Their territory has been reduced to half its size and they are surrounded by soybean plantations. Their health is declining and the children suffer from malnutrition.

In order to serve the soybean business, the governments of the producer countries are building dams, bridges and highways in virgin ecosystems, with the consequent negative impacts on the environment. The toxic chemicals used on the plantations are contaminating water supplies and putting at risk the health of the plantation workers and those who live nearby.¹

Brazil has also developed a huge ethanol industry based on sugar cane. This is also grown on land which was formerly rainforest. In 2006, Brazil announced ambitious plans to cut down up to one third of all the remaining rainforest to plant energy crops for export to the US and Europe.

Meanwhile, the Benelux countries are importing palm oil and palm kernels from Indonesia and Malaysia, two countries with abysmal track records on rainforest destruction. Some 1.4 million tonnes of these products were imported into the Netherlands and Belgium in 2005 for electricity generation. The Dutch company Nedalco is planning to build a plant capable of producing ethanol from palm kernel meal. Other companies from Germany, Austria and Belgium are also investing

in this sector.

Although pressure from environmental organisations such as Greenpeace has forced the Dutch government to cut subsidies on imported palm oil, there are still grave concerns about the survival of the south-east Asian rainforests. As in South America, energy crops are rapidly becoming the main cause of deforestation in a swathe of countries running from Thailand to Borneo. A new word has been coined to describe these crops: *agrofuels*.

Environmental Consequences and Human Rights Violations

The Transnational Institute, a research organisation dedicated to highlighting social injustice and environmental degradation, produced a report in which they expressed concern about “the potential for agrofuels to accelerate climate change, rather than combat it. Production involves considerable emission of greenhouse gases from soils, carbon sink destruction and fossil fuel inputs and is already causing significant deforestation and destruction of biodiversity. The clearance of Indonesia’s peat forests to plant oil palm plantations has caused massive outputs of CO₂. Once forest removal reaches a certain ‘tipping point’, a process of self destruction may begin, particularly in the Amazon. Because so much remains unknown, a precautionary approach to developing agrofuels is necessary”.

The institute went on to add “Food production could experience serious competition from energy crops. World food reserves are falling while the demand for grains and oilseeds has outstripped supply for the last seven years. Prices have risen sharply. In the case of maize, this is due to increasing amounts of US corn being used for ethanol rather than food. As ever, it is the poor and marginalized who suffer the worst impacts.

“The EU and the US are setting targets for agrofuel use in transport, but will not be able to produce the feedstock themselves. Producing soya for animal feed is already causing serious problems in Latin America, while oil palm plantations have proved extremely destructive in both Latin America and Asia. Now these countries are gearing up to respond to the demand for agrofuels, further increasing the pressure on food production”

According to the institute “Human rights violations have already resulted

from soya, sugarcane and palm monocultures in Latin America and Asia, and these are likely to intensify through the production of agrofuels. Production of agrofuel crops may involve violent evictions and murders”.²

Air Pollution

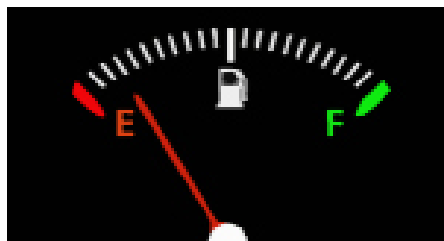
There is considerable doubt whether agrofuels are the clean, environmentally product they are portrayed as. A study by Stanford University atmospheric scientist Mark Z. Jacobson found that “a high blend of ethanol poses an equal or greater risk to public health than gasoline [petrol]”.

The study found that the use of E85, a popular blend of 85 percent ethanol and 15 percent gasoline would “reduce atmospheric levels of two carcinogens, benzene and butadiene, but increase two others—formaldehyde and acetaldehyde”. According to Jacobson, “cancer rates for E85 are likely to be similar to those for gasoline. However, in some parts of the country, E85 significantly increased ozone, a prime ingredient of smog.”

Inhaling ozone—even at low levels—can decrease lung capacity, inflame lung tissue, worsen asthma and impair the body’s immune system, according to the Environmental Protection Agency. The World Health Organization estimates that 800,000 people die each year from ozone and other chemicals in smog³.



Irish Government expectations are that transport fuel requirements will increase by 46% by 2020



Agrofuels in Ireland

In Ireland agrofuels have also been the subject of much government and corporate spin and there is little honest debate on the limitations of these fuels. Early in 2006, Teagasc biofuel expert Bernard Rice expressed the view that in the short to medium term, Ireland would do well to meet more than a tiny fraction of its transport fuel requirements from indigenous energy crops.

Even if one quarter of the 400,000 hectares of land currently under tillage (all crops combined) was allocated to oil seed rape production in a four year rotation, the total yield of roughly 130 million litres of fuel would only meet about 3 percent of current road transport requirements. If wheat or sugar beet were grown instead, the yield might rise to 5 or 6 percent.

According to SEI (Sustainable Energy Ireland, a State body), in 2006 Ireland produced about 2.7 million litres of biofuel, almost two thirds of which came from rapeseed oil. The origin of the remainder remains unclear but the majority is probably from recycled fats from the food industry.

There appears to be some confusion in the ranks of SEI about production figures however, for other data provided by SEI stated that 3.8 million litres of biofuels were used in transport in 2006, yet apparently no biofuels were imported.

These figures may sound impressive, but in 2006, Ireland used 2703 million litres of diesel and a further 1929 million litres of petrol. Biofuel production amounts to a mere 0.08% of the fuel used in our road vehicles. Over 99.9% of Ireland’s transport fuel comes from imported petroleum.

SEI was also unable to produce any estimates of biofuel production for 2007 or for the future, in spite of the Irish government expressing commitment to meeting the EU biofuel target of 5.75 percent penetration by 2010. However, SEI did expect fuel demand to rise by an extra 30 percent in the next 4 years.

“for every litre of biofuels produced in Ireland by 2020, Ireland will need to import an extra twenty litres of oil”

What is clear, however, is that Ireland has no strategy which could possibly increase biofuel production by the multiple of one hundred necessary to meet its stated targets for 2010.

The reality is, of course, it won’t. For all the massive hype in Ireland about biofuels, including notable contributions from members of the Green party, the quantity of biofuels produced in Ireland is simply a drop in the ocean when compared to fuel demand. The best case scenario for biofuel penetration by 2010 is about 1 percent. That’s about enough for about one quarter of the 94,000 people who voted Green in the last election to keep their cars on the road.

Meanwhile, the Irish Government is blithely predicting that transport fuel demand will increase by 46 percent by 2020. Government policy seems focussed on making sure that this increase in fuel demand actually happens. It is epitomised by the building of more motorways linking distant commuter towns with Dublin, the proposals to construct another terminal at Dublin airport, and the granting of planning permission for all manner of unsustainable development tying Ireland into greater dependency on road transport.

A 46 percent increase in demand will mean that for every litre of bio/agrofuels produced in Ireland by 2020, Ireland will need to import an extra twenty litres of oil. Against this backdrop of an ever increasing demand for transport fuel, agrofuels are simply a misuse of resources.

Unless measures are taken to drastically reduce the quantities of fuel needed for transport Ireland’s dependency on imported fossil fuels will only become more acute. This is the challenge Ireland faces. It is nonsensical to talk about sustainable transport while neglecting the crux issue, which is demand not supply.

¹ World Rainforest Movement. www.wrm.org.uy/index.

² The Transnational Institute: Agrofuels. This damning report identifies 9 key areas where there is major cause for concern. www.tni.org

³ www.sciencedaily.com/releases/2007/04/070418072616.htm

*Correspondance between Lenny Antonelli and SEI July/August 2007

