

ACSEB – Action for Sustainable Energy for Bristol

Why DECC should stop ROCs for bioliquid fuels NOW.

1. **Scientists have shown that burning palm oil, the most widely used biofuel for electricity generation, causes more greenhouse gas emissions (GHGe) than fossil fuels.** Unfortunately much international legislation including the Kyoto Protocol and European Renewable Energy Directive (RED) contains serious carbon accounting errors that hide this fact.
2. **Bioliquid fuels are causing a massive new demand for palm oil and other oil crops, this can only be filled with new plantations carved from tropical forest.** Whether palm-oil is produced from ‘certified’ plantations or not, exporting palm-oil to be burnt in power-stations etc. is a new demand when existing production is already fully subscribed-for. This supply can only be harvested from new plantations. This is not a ‘sustainable’ practise.
3. **Plants are very inefficient converters of the energy of the sun.** As a source of renewable energy DECC’s own scientific advisor David MacKay has said that biofuels “are scarcely worth talking about” and The Government’s Chief Scientific Advisor has said that cutting down rainforest to produce biofuel crops is “profoundly stupid”.
4. **Palm oil producers are inflicting major human rights abuses in southeast Asia, Central and South America and West Africa:** including forced eviction of populations, rape and murder. The RED takes no account of these illegal actions by this evil industry.
5. **Diverting land from food to energy crops e.g. for Jatropha plantations, maize for ethanol, etc. has already caused food prices to rise and the poor to starve.**
6. **No credible, valid certification system for so-called ‘sustainable’ palm oil exists.** It is both impossible scientifically and impractical to deliver because of the bulk shipping methods used for the product. Paper certification is already corrupt.
7. **OFGEM is unqualified and not required to verify the validity of certificates produced by consultants.** OFGEM certification for subsidies will be annual and retrospective – after the damage is done, and thus much harder to stop. Lack of secure ‘policing’ by OFGEM will thus allow abuse to increase.
8. **W4B’s proposals for Avonmouth and Portland will together double UK imports of palm-oil.** There is no opportunity at either site for CHP, thus the plants will be very inefficient in energy conversion. W4B have repeatedly changed their submissions about the fuel to be used. In

their planning applications they state that it is to be palm oil and jatropha oil. Palm oil is the cheapest bio-liquid feedstock and is used by the comparable generators in Italy. It is thus the likely fuel-stock. Jatropha is not yet commercially available.

9. DECC has commendably endeavoured to establish full life cycle carbon accounting for biofuels. **The NNFCC report 10-016 gives biofuels a very feeble endorsement.** It says, *"It is not impossible for some installations to generate good greenhouse gas savings, even with tropical feedstocks."* **Unfortunately the report takes no account of either direct or indirect land use change (LUC & ILUC) the most important long-term contributor to GHGs.** NNFCC 11-016 states that where other renewable technologies are not viable the technology can be effective. *"These installations are likely to include small-medium scale CHP (perhaps up to 20MWe) and some heat-only application."* Not the kind of industrial scale generation plants proposed by W4B. Nor does the report use the latest scientific results on oil-palm plantation emissions. Nor does it use 'corrected' carbon calculations.
10. **Under the RED the "default" levels for GHG savings (35% for palm oil) can only be used if the emissions from LUC are less than or equal to zero.** This is impossible scientifically. The European Commission has also announced that it proposes: *"To increase the minimum greenhouse-gas saving threshold for new installations to 60% in order to improve the efficiency of biofuel production processes as well as discouraging further investments in installations with low greenhouse gas performance."*
11. In October 2012 the European Commission reduced the proportion of transport fuels required to be from biofuels to 5% in 2020, and to 'limit' the global land conversion for biofuels. This shows that the EC has recognised that the impacts of crop biofuels are significant enough to warrant a policy adjustment.
12. DECC state that most bioliquids currently used derive from wastes and residues. These quantities are very small. The 4% cap proposed in the ROC Banding Review will create a 500,000 tonnes demand and the Dutch, German and Italian experience shows that palm-oil will be the preferred fuel in industrial quantities, because it is the cheapest.
13. **Britain is exceptionally fortunate in its potential for wind and tidal - truly renewable energy.** A far more efficient use of energy subsidies, and of direct benefit to Bristol, would be to support Bristol as a base for the proposed Atlantic Array wind farm near Lundy Island. Bristol has the second largest tidal range in the world - ideal for tidal lagoon and tidal stream generation. Portland is suitable for both tide and wind generation. These should be subsidised, not biofuels which are a scam.

Conclusion

Biofuels can cause worse climate damage than fossil fuels. Given all the errors in current legislation, the prevalence of corrupt practice in certification, and the new demand driven by fuel substitution, the only sensible option is to apply the precautionary principle and stop Renewables Obligation Certificates (ROCs) subsidies for bioliquids NOW. Voters' money (ROCs come from their electricity bills) should be used to promote renewable energy industries that deliver a guaranteed saving of GHGs. Germany and the Netherlands have seen sense and stopped these subsidies already. DECC should do the same. Under no circumstances should ROCs for bioliquids be guaranteed for long periods, because the scientific argument against biofuels will win, showing the ROCs to be misguided. The RED prohibits the exclusion of one bioliquid, such as palm-oil, from subsidy, but it does *not* require the subsidy of electricity generation from bioliquids. Most EU countries do not do so.

DECC should be contesting the emissions savings in the Appendix of the RED, these were supplied by the petroleum and car industries. DECC should also be correcting the carbon accounting faults found by Timothy Searchinger et al (Science 23 October 2009: Vol. 326 no. 5952 pp. 527-528 DOI: 10.1126/science.1178797) and investigating alternative carbon-accounting systems to be adopted by the EU such as annual basis carbon (ABC) as proposed by De Cicco.

[http://deepblue.lib.umich.edu/bitstream/2027.42/78278/1/Toward Rational Mgmt GHGs Biofuels.pdf](http://deepblue.lib.umich.edu/bitstream/2027.42/78278/1/Toward_Rational_Mgmt_GHGs_Biofuels.pdf)

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NB See below for supporting documents

Why DECC should stop issuing ROCs for bioliquid fuels NOW.

ACSEB Supporting Documents

Paragraph numbers relate to preceding document

Section

1. GHG emissions, Carbon accounting error

Unfortunately the European Renewable Energy Directive (RED) and similar 'greenhouse gas and sustainability standards' for bioliquids in the UK ignore Indirect Land Use Change (ILUC) as well as any credible verification.

Scientists have shown that burning palm oil, the most widely used biofuel for electricity generation, causes more greenhouse gas emissions (GHGe) than fossil fuels.

The widely held belief that when you burn fuel from crops it only releases the carbon absorbed when they grow is false. Unfortunately the European Union bought into this biofuel fallacy, perhaps with the best of intentions, but certainly encouraged by the lobbies of the car and petroleum industries. There are massive financial interests at play, and it was very inconvenient for the agricultural lobbies when the science showed that biofuels were worse than fossil fuels for GHGes.

1.1 In 2011, the European Environment Agency published a scientific report¹ that drives a coach and horses through the argument that Biofuels, including bioliquids, produce less greenhouse gases than fossil fuels. They state

“Several European Union energy directives encourage a switch from fossil fuels to renewable energy derived from plant biomass based on the premise that biomass combustion, regardless of the source of the biomass, would not result in carbon accumulation in the atmosphere. This mistaken assumption results in a serious accounting error. . . Hence, legislation that encourages substitution of fossil fuels by bioenergy, irrespective of the biomass source, may even result in increased carbon emissions – thereby accelerating global warming.”

Even without solving the accounting error, DECC's own commissioned study from the NNFCC shows that burning palm oil is worse than using fossil fuels.²

Carbon accounting error

¹ <http://www.eea.europa.eu/about-us/governance/scientific-committee/sc-opinions/opinions-on-scientific-issues/sc-opinion-on-greenhouse-gas>

² <http://www.biofuelwatch.org.uk/wp-content/uploads/NNFCC-Vegetable-Oil-Study-v061-March-2010.pdf>

1.2 Timothy Searchinger of Princeton Environmental Institute has shown up the fundamental 'accounting error' when counting 'savings' from biofuels³.

Searchinger points out that it is a common assumption that biofuels reduce greenhouse gas emissions by reducing emissions from fossil fuels. Yet a power-station diesel engine burning biofuels will emit roughly the same levels of CO₂ through its chimney as one burning diesel. In a power-station, biofuels just replace one source of emissions with another. ⁴

1.3 He concludes:

"Much biofuel policy and science have evolved from the incorrect assumption that the renewable nature of plant growth means the carbon emitted by biofuel combustion does not affect the climate. Renewable does not mean carbon is free. . . Land absorbs new carbon each year, but spending it on biofuels means giving it up for other purposes [such as greenhouse gases]."

1.4 A study including the first comprehensive review of scientific literature on emissions from oil palm plantations, by Prof. Sue Page of the University of Leicester, has shown that greenhouse gas emissions from oil palm plantations are 50% higher than previously thought. <http://www2.le.ac.uk/offices/press/press-releases/2011/november/new-study-suggests-eu-biofuels-are-as-carbon-intensive-as-petrol>

1.5 The carbon sequestered from the atmosphere by the biofuel crop *at best* can compensate for the carbon released when the original vegetation was burnt – *so the stack emissions must be counted as carbon released by the biofuel*. Burning the biofuel passes to the atmosphere the carbon previously stored in plant-life on the land. It is incorrect to ignore stack emissions of CO₂ from biofuels because there is no *additional* plant growth to offset them.

³ *Science* 23 October 2009: Vol. 326 no. 5952 pp. 527-528 DOI: 10.1126/science.1178797 –“ The accounting now used for assessing compliance with carbon limits in the Kyoto Protocol and in climate legislation contains a far-reaching but fixable flaw that will severely undermine greenhouse gas reduction goals. It does not count CO₂ emitted from tailpipes and smokestacks when bioenergy is being used, but it also does not count changes in emissions from land use when biomass for energy is harvested or grown. This accounting erroneously treats all bioenergy as carbon neutral regardless of the source of the biomass, which may cause large differences in net emissions. For example, the clearing of long-established forests to burn wood or to grow energy crops is counted as a 100% reduction in energy emissions despite causing large releases of carbon. “

"There is a huge imbalance between the carbon lost by plowing up a hectare [2.47 acres] of forest or grassland from the benefit you get from biofuels."

⁴ *Environ. Res. Lett.* 5 (April-June 2010) 024007

Land Use Change (LUC) and biofuel carbon debt

1.6 Joseph Fargione, an ecologist with the US Nature Conservancy has shown⁵:

“Biofuels are a potential low-carbon energy source, but whether biofuels offer carbon savings depends on how they are produced. Converting rainforests, peatlands, savannas, or grasslands to produce food crop-based biofuels in Brazil, Southeast Asia, and the United States creates a “biofuel carbon debt” by releasing 17 to 420 times more CO₂ than the annual greenhouse gas (GHG) reductions that these biofuels would provide by displacing fossil fuels.”

1.7 The carbon, stored in the original plants and soil, is released as carbon dioxide when that organic matter is burnt or decays. This can go on for 50 years or longer. The worst case the researchers examined was converting peatlands in Indonesia into palm oil plantations. This ran up a carbon debt that would take 423 years to pay off.

"Any biofuel that causes land clearing is likely to increase global warming," says Fargione, " It takes decades to centuries to repay the carbon debt that is created from clearing land."

1.8 The United Nations Environment Program has also stated⁶:

“The production and use of biodiesel from palm oil on deforested peatlands in the tropics ... can lead to significant increases in greenhouse gas emissions - up to 2,000 percent or more when compared with fossil fuels.”

2. Massive new demand

Indonesia is already the world’s third highest emitter of GHGs from forest destruction. A couple of years ago the Indonesian government said that they plan to increase palm oil plantations by 20 million hectares by 2020. That is over 4/5ths of the entire area of the UK or ten times the size of Wales.

Further published evidence on the climate and forest catastrophe caused by expanding palm oil plantations.

2.1 *Committed carbon emissions, deforestation, and community land conversion from oil palm plantation expansion in West Kalimantan, Indonesia.* PNAS.

<http://www.pnas.org/content/early/2012/04/19/1200452109.full.pdf+html>

This paper finds that in 2007--2008, oil palm plantations directly

⁵ Fargione, J., J. Hill, D. Tilman, S. Polasky and P. Hawthorne. 2008. Land clearing and the biofuel carbon debt. *Science* 319: 1235-1238

⁶ Towards Sustainable Production and Use of Resources: Assessing Biofuels 2009
www.unep.fr, <http://www.unep.fr/scp/rpa>

caused 27% of total and 40% of peatland deforestation in West Kalimantan. Under a business as usual (BAU) scenario, by 2020 ~40% of regional and 35% of community lands will be cleared for oil palm, generating 26% of net carbon emissions. BAU scenario results indicate that ~40% of peatlands will be planted with oil palm by 2020, with carbon emissions from peatlands projected to contribute 87% of total emissions under BAU.

2.2 Oil Palm Surging Source of Greenhouse Gas Emissions

<http://www.sciencedaily.com/releases/2012/04/120426105658.htm>

ScienceDaily (Apr. 26, 2012) - Continued expansion of industrial-scale oil palm plantations on the island of Borneo will become a leading cause of greenhouse gas emissions by 2020 unless strong forest and peatland protections are enacted and enforced, according to a National Academy of Sciences study.

... The researchers were surprised to learn that 50 percent of oil palm plantations were established on peatlands through last year. When peat soils are drained for oil palm cultivation, they begin to release carbon dioxide, a greenhouse gas. The study found that if oil palm expansion continues, with no restrictions on peatland development, almost 90 percent of oil palm's greenhouse gas emissions will come from peatlands by 2020.

"Preventing oil palm establishment on peatlands will be critical for any greenhouse gas emissions-reduction strategy,"

3. Plants are very inefficient converters of the energy of the sun.

David MacKay, Scientific Advisor to the DECC, has dismissed UK-grown biofuels because plants are such inefficient converters of solar energy.⁷

He writes:

"I think one conclusion is clear: *biofuels can't add up* – at least, not in countries like Britain, and not as a replacement for all transport fuels. Even leaving aside biofuels' main defects – that their production competes with food, and that the additional inputs required for farming and processing often cancel out most of the delivered energy – biofuels made from plants, in a European country like Britain, can deliver so little power, I think they are scarcely worth talking about."⁸

His conclusion, based only on energy production and not including LUC or ILUC, is completely contrary to the European Renewable Energy Directive's requirement, and government policy, that biofuels must be part of transport fuels, and the justification of the ROC subsidies for biofuels.

⁷ Fields of rape produce 1200 litres of biodiesel per hectare per year; biodiesel has an energy of 9.8 kWh per litre; So that's a power per unit area of 0.13 W/m². David JC MacKay *Sustainable Energy – without the hot air*, UIT Cambridge, 2009, p 283

⁸ *Ibid* p 44

To light a 100 Watt light-bulb requires 500 square metres of jatropha plantation. That same bulb can be lit with just *half* a square metre of solar PV cells. In reality jatropha produces far less than that, because at least a third of the energy gained from the oil gets used up in fertiliser, processing, and transporting, and the diesels are 47% efficient - so actually you need 1,600 square metres of plantation for that same bulb. Palm oil gives similar results. It is a stupid way to generate electricity. It is only thinkable if *you* pay massive subsidies.

In the words of Prof. John Beddington, Chief Scientific Advisor to the government. "*Cutting down rainforest to produce biofuel crops is profoundly stupid.*"⁹

4. Palm oil producers are inflicting major human rights abuses

<http://tech.groups.yahoo.com/group/biofuelwatch/message/4568>

In Bajo Aguan, Honduras, at least 25 peasants have been killed in land conflicts over oil palm plantations between January 2010 and March 2011 alone - more have died since:

<http://www.fidh.org/IMG/pdf/honduras573ang.pdf>

5. Diverting land from food to energy crops e.g. for Jatropha plantations, maize for ethanol, etc. has already caused food prices to rise and the poor to starve.

See:

<http://www.foei.org/en/resources/publications/pdfs/2011/jatropha-money-doesnt-grow-on-trees/view>

<http://www.foeeurope.org/download/jatropha_FoEireport_Jan2011.pdf>

http://www.actionaid.org.uk/102833/real_lives_affected_by_biofuels.html

http://www.foodnavigator-usa.com/Financial-Industry/GMA-issues-perfect-storm-warning-against-ethanol-credits?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+ActionaidUkBiofuelsRssFeed+%28ActionAid+UK%3A+Biofuels+RSS+feed%29

http://www.businessinsider.com/corn-ethanol-production-2011-4?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+ActionaidUkBiofuelsRssFeed+%28ActionAid+UK%3A+Biofuels+RSS+feed%29#ixzz1JnFPoCqK

⁹ *Independent*. 12 April 2008.

6. No valid certification system for so-called 'sustainable' palm oil exists.

6.1 The European Commission has published a list of *voluntary* certification schemes for biofuels that are eligible to be used under the Renewable Energy Directive in order to receive government support or count towards mandatory renewable energy targets.

http://ec.europa.eu/energy/renewables/biofuels/sustainability_schemes_en.htm

However, biofuels do not have to be certified by any of these schemes in order to be accepted as meeting RED criteria. It would be sufficient for, say W4B, to employ a consultant who simply signs a document to say that their palm oil meets the RED standards, giving some quite minimal information about the feedstock sourcing. There is no requirement for any genuinely independent audit - verifying claims is outside OFGEM's remit - and the certification schemes are simply one of different options open to energy companies.

The following (6.2 - 6.8) claims on the fallibility of specific cases of certification have been made by other NGOs such as Greenpeace, Friends of the Earth, Biofuelwatch, ActionAid, etc. all of which are campaigning against the use of bioliquid fuels.

6.2 International Sustainability and Carbon Certification (ISCC) is one of the dozen schemes approved, thus any biofuels certified by them will automatically be deemed to satisfy all EU criteria and thus, for example, to be eligible for ROCs. Neste Oil has obtained ISCC certification for biofuels produced at its larger refinery in Finland, mostly using palm oil.

6.3 The German government has recognised the ISCC as 'guaranteeing' that both 'sustainability' and 'greenhouse gas reduction' standards are being met. The ISCC certificate for Neste Oil as well as their certificates for several oil palm plantations are particularly relevant because those cover land use as well as greenhouse gases.

6.4 As with the RSPO and most other certification schemes, certification is carried out by accredited companies, not by the ISCC directly. Neste Oil's Porvoo refinery was approved by SGS. SGS "provides inspection, testing, certification & verification services" for many different purposes. For example for the Clean Development Mechanism (CDM). In November 2009, the CDM Board suspended them for bad practices, including approving projects without independent technical reviews, i.e. without investigating them properly¹⁰.

6.5 One SGS branch (SGS Qualifor) has been certifying for the Forest Stewardship Council. In 2008, they declared a short-lived moratorium

¹⁰ Annex 2, Page 2, http://cdm.unfccc.int/EB/049/eb49_repan02.pdf

on awarding FSC certificates. Amongst their dodgy FSC certificates had been one for a Brazilian plantation (belonging to Veracel) which was then found, by a Brazilian court, to have been illegally planted. The court fined the plantation company and ruled that they had to remove the eucalyptus trees and restore 96,000 hectares of native forests. Despite this verdict, the SGS-approved FSC certificate remained in place.

6.6 SGS Qualipalm certifies for the RSPO. A recent RSPO certificate went to oil palm plantations by Daabon in Colombia which had received a lot of media attention after Christian Aid published evidence that they had 123 peasant families forcibly evicted¹¹. The Body Shop reviewed the evidence and severed its links with Daabon. SGS looked at the evidence and recommended RSPO certification.

6.7 The ISCC certificate for Neste Oil states that Neste Oil's mostly-palm-oil-biofuels deliver greenhouse gas savings of more than 50% compared to fossil fuels and are sustainably produced. ISCC does not publish any further details or reports. However, Neste Oil's 'flagship' supplier of palm oil is IOI.

6.8 IOI's allegedly 'climate friendly and sustainable' practices, for which they are being praised by Neste Oil and for which have now received several RSPO certificates include:

- Bulldozing large tracts of rainforests as well as local farmers' paddy fields and fruit trees in Sarawak: A Malaysian court earlier this year ruled against the company declared IOI's land leases 'null and void', stating that they had been obtained illegally and unconstitutionally - a major if rare victory for indigenous communities.
- (<http://www.bmf.ch/en/news/?show=199>);
- Investing in a 1 million hectare oil palm expansion programme in Sarawak recently announced by the provincial government which will primarily convert 'native customary forest', i.e. rainforests that belongs to indigenous peoples, such as the Penan. (http://news.mongabay.com/2010/1130-ncr_sarawak_palm_oil.html).
- In West Kalimantan: Unauthorised conversion of forests and peatlands for oil palm plantations, fraudulent claims in EIAs, plantations illegally set up without EIAs, increase in fire hotspots in IOI plantations, exclusion of local communities from land being converted to plantations which is likely to trigger land conflicts - according to a report by FoE Netherlands (Milieudefensie) and FoE Europe. (http://www.foeeurope.org/publications/2010/Too_Green_to_be_True0310.pdf).

¹¹ <http://www.guardian.co.uk/world/2009/sep/13/body-shop-colombia-evictions>

6.9 Biofuelwatch have published a damning analysis of the failures of the current system for certifying the sustainability of biomass: http://www.biofuelwatch.org.uk/2012/biomass_myth_report/

7. OFGEM is unqualified and unable to verify the validity of certificates produced by consultants.

Under ROO 2011 Annual Bioliquid Sustainability Audit Reports will be submitted at the end of each obligation period.

8. W4B's proposals for Avonmouth and Portland will double UK imports of palm oil.

Palm oil at present imported to the UK is almost entirely used for food and manufactured products.

The W4B Avonmouth plant will require 22,000 hectares of palm-oil plantations – twice the area of the city of Bristol.

The current ROC subsidies *encourage* tropical deforestation

8.1 For palm oil to be treated as an Energy Crop by OFGEM (who will issue Renewables Obligation Certificates (ROCs) under RED rules) it must come from trees that were planted for the purpose of producing biofuel. W4B will have to use palm products from *new* energy plantations – this means plantations newly carved from the forest.

8.2 This is the United Nations Environment Program's assessment of palm oil production in Indonesia, 2009¹²:

"In Southeast Asia, palm oil expansion – for food and non-food purposes – is regarded as one of the leading causes of rainforest destruction. In Indonesia, a further extension of 20 Mha for palm oil trees is planned¹³ [about 4 times the area of Wales, Ed.], compared with the existing stock of at least 6 Mha. Two-thirds of the current expansion of palm oil cultivation in Indonesia is based on the conversion of rainforests, one third is based on previously cultivated or to-date fallow land. Of the converted rainforest areas, one quarter contained peat soil with a high carbon content – resulting in particularly high GHG emissions when drained for oil palms. By 2030, a share of 50% from peat soils is expected. If current trends continue, in 2030 the total rainforest area of Indonesia will have been reduced by 29% as compared to 2005, and would only cover about 49% of its original area from 1990."

The Indonesian Government signed a decree for a 2-year 'moratorium' on deforestation except for 45 million hectares of rainforest which could still be cut down. This is double the size of the entire United

¹² <http://www.unep.fr/shared/publications/pdf/WEBx0149xPA-AssessingBiofuelsSummary.pdf>

¹³ <http://chrislang.org/2010/01/26/indonesia-government-proposes-21-million-hectares-of-plantations-to-meet-climate-targets/>
<http://www.forestpeoples.org/sites/fpp/files/publication/2010/08/promisedlandeng.pdf>

Kingdom. This is a far larger area than two years' worth of annual deforestation. This Greenpeace map shows how much forest could be destroyed under such a moratorium':

<http://www.greenpeace.org/international/Global/international/publications/forests/2011/MoratoriumMaps.pdf>.

Despite the moratorium, forest continues to be destroyed in central Kalimantan, the province that is the centre of Indonesia's REDD+ pilot programme.¹⁴

9. DECC

9.1 The Department for Energy and Climate Change commissioned a study that compares the life cycle greenhouse gas savings of a range of vegetable oils for heat, power and transport, including oil seed rape grown in the UK, Malaysian palm oil and jatropha cultivated commercially in India¹⁵.

9.2 This study shows Malaysian palm oil used as biofuel for electricity generation (as in W4B's case) producing 37% *more* greenhouse gases than gas-fired electricity generation. For Jatropha the figure is worse - 109% *more* GHGs than gas-fired generation. Thus it states that it is worse for the climate to burn palm-oil or jatropha than to burn gas.

9.3 The NNFCC consultants acknowledge that their study does not include the effects of Indirect Land Use Change and accept the commonly held, but erroneous, position that biomass combustion is carbon-neutral.

This study falls into the same carbon accounting error shown up by Searchinger. It does not include carbon lost to the atmosphere by burning off the original plant cover to create the plantations. It is NOT a full life-cycle analysis. Were the study to include these effects it would show that burning tropical biofuels is tens, hundreds, even thousands of times worse than burning any fossil carbon fuel.

10. Under the RED the "default" levels for GHG savings (35% for palm oil) can only be used if the emissions from LUC are less than or equal to zero.

10.1 Under the EU Renewable Energy Directive and Fuel Quality Directive 5/6/2009 (RED) the minimum GHG equivalent (GHGe) saving must be 35%. It states that the savings be interpreted according to Article 19. This gives GHGe savings for Palm oil biodiesel as 36% or a default saving of 19% (note that this is below the permissible level). With methane capture at the oil mill the saving rises to 62% with a default of 56%. Both sets of figures are qualified by the note "*if produced with no net emissions from land use change*" [Ed's italics].

¹⁴ <http://news.mongabay.com/2012/0712-eia-investigation-pt-best.html>

¹⁵ http://www.nnfcc.co.uk/metadot/index.pl?id=10478;isa=DBRow;op=show;dbview_id=2539

This requirement is scientifically *impossible* to achieve, as Searchinger, Fargione and other scientists quoted have shown. Biofuels that do not meet these standards cannot be subsidised.

10.2 The European Commission proposes, inter alia:

"... to amend the current legislation on biofuels through the Renewable Energy1 http://europa.eu/rapid/press-release_IP-12-1112_en.htm#footnote-1>

and the Fuel Quality2 <http://europa.eu/rapid/press-release_IP-12-1112_en.htm#footnote-2> Directives and in particular:

To increase the minimum greenhouse gas saving threshold for new installations to 60% in order to improve the efficiency of biofuel production processes as well as discouraging further investments in installations with low greenhouse gas performance."

http://europa.eu/rapid/press-release_IP-12-1112_en.htm

10.3 No figures are given in the above document for Jatropha.

10.4

In setting this higher threshold (up from 35%) - albeit only for new installations - the EC is effectively saying that palm oil, soybean oil and rapeseed biodiesel do not qualify for transport renewable energy targets. Nor does wheat and maize ethanol. The typical and default values for GHG savings in the RED for these vegetable oils are:

Palm: 40% (typical) and 27% (default) - hydrotreated oil, i.e. not diesel

Soybean: 40% and 31% - biodiesel figures since no values given for unmodified oil

Rapeseed: 58% and 57% - hydrotreated oil, i.e. not diesel

Thus subsidising palm oil for electricity and treating it as renewable/sustainable, is contrary to the EU policy direction on transport biofuels which holds that palm is now no longer 'renewable'.

11. In October 2012 the European Commission reduced the proportion of transport fuels required to be from biofuels to 5% in 2020

http://ec.europa.eu/energy/renewables/biofuels/land_use_change_en.htm

13. Britain is exceptionally fortunate in its potential for wind and tidal truly renewable energy.

The recent DECC consultation on the UK Electricity Market Reform (EMR) says: '*Renewable electricity is key to our low-carbon energy future ...The UK has some of the best natural renewable energy resources in Europe*' In fact DECC recently announced: '*The UK is rated number 1 in the world for its attractiveness for the offshore wind industry*'.

The tidal range in the Severn Estuary is up to 15 metres or 49 feet.

Conclusion

The DECC should follow the example and *precedent* of the Netherlands¹⁶ and Germany and stop the ROC subsidies for burning palm-oil for electricity generation. There is nothing in the RED that requires subsidy for bioliquids for energy generation. However the exclusion of subsidy from one kind of fuel is not permitted.

Article 17(8) prohibits member states from 'discriminating' against any particular biofuel sources which meet EU standards ("For the purposes referred to in points (a), (b) and (c) of paragraph 1, Member States shall not refuse to take into account, on other sustainability grounds, biofuels and bioliquids obtained in compliance with this Article.")

There was a strong campaign against palm-oil burning for electricity, particularly by Friends of the Earth Netherlands (Milieudefensie), which resulted in a decision to stop subsidies for this use in December 2007: http://findarticles.com/p/news-articles/new-straits-times/mi_8016/is_20071211/netherlands-stops-subsidies-imports-palm/ai_n44384793/ .

The subsidies were cancelled. Subsequently, similar subsidies were withdrawn in Germany. This resulted in the end of palm oil/vegetable oil use as a fuel for electricity generation in those countries.

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¹⁶ The National Renewable Electricity Plan from the Netherlands which has been accepted by the European Commission: http://ec.europa.eu/energy/renewables/action_plan_en.htm . It says explicitly: "Bioliquids are not expected to contribute to the electricity supply in 2020."