

Dear Ms Pett,

Thank you for asking biofuelwatch to submit material for this review by DEFRA. I apologise that this material comes very late for your workshop meeting tomorrow- we are working very hard in preparation for the upcoming climate talks in Bali.

Please put forward the following recent work:

- August 2007: Nobel prize winner Paul Crutzen and others (see <http://tinyurl.com/2elcyc>) suggests that oilseed rape biodiesel can produce up to 70% **more** greenhouse gas (GHG) emissions than fossil fuel diesel due to high nitrous oxide emissions from nitrate fertilisers. Oilseed rape comprises 80% of EU home-grown biodiesel.
- October 30th: Five senior scientists have written to the head of IPCC, Dr R K Pachauri, to highlight 'serious and dangerous deficiencies' in the IPCC AR4 Mitigation book on biofuel emissions balances. The IPCC did not model the effects of land-use change that can cause carbon emissions that negate any emission 'benefits' for decades or centuries (see <http://tinyurl.com/38r3ks>).
- November 9th: Greenpeace International release 'Cooking the Climate' report on how the Palm Oil industry driven by EU binding target on biofuels is causing massive climate damage. They indicated that 8% of global emissions could be saved by preventing deforestation, stopping peatland conversion and regenerating degraded peatlands. How the palm oil industry is Cooking the Climate, Greenpeace, Nov 2007, <http://tinyurl.com/2yhs36>
- November 2007: The recent report from New Economics Foundation "*Up in Smoke? Asia and the Pacific: the threat from climate change to human development and the environment*", <http://tech.groups.yahoo.com/group/biofuelwatch/message/1371> should also be considered.

Please consider also these two reports from biofuelwatch:

1. 'Agrofuels threaten to accelerate global warming', Report by Dr Andrew Boswell, Almuth Ernsting, Deepak Rughani, Biofuelwatch, Updated Dec 2007, UNFCCC, Bali version. This is currently being redrafted, however, I have sent you a near final draft. It looks specifically at impacts from agriculture and land-use change. There are many references in this document that should be considered too. (attached)
2. "How Meaningful Are 'Greenhouse Gas Standards' For Biofuels In A Global Market?", Almuth Ernsting, Biofuelwatch (attached)

I would suggest that it is very important that the review looks at the flaws in the Renewable Transport Fuel Obligation methodology too. I would highlight three areas that need urgent examination:

1. Under the RTFO passed last month in Parliament, emissions from destroyed peatlands need only be reported where biofuels are grown on peatland converted since 2005. Yet, as the Greenpeace report above points out, these peatlands need urgently regeneration (eg reflooding) and could save 0.5 billion tonnes of emissions (c. 1% of total global emissions) annually. There are increasing calls for the damaged peatlands in South East Asia to be regenerated to save

significant emissions and stabilise this crucial carbon sink. Instead, the Department for Transport is allowing biofuels derived from previously destroyed peatlands to enter the UK fuel supply chain masquerading as benign, 'clean', 'green' fuels.

2. Biofuel suppliers are only required to report 50% of their biofuels in 2008-2009. This allows 'poorly performing' (or in plain English climate destroying) biofuels to be imported without them showing up on the official record. For example, Palm Oil, creating up to 9 times the greenhouse gas emissions than diesel, may be hidden in the unreported 50%.
3. On the recent scientific paper by Nobel prizewinner Paul Crutzen. It suggests that high nitrous oxide emissions from nitrate fertilisers have been under calculated in biofuel greenhouse emission balance studies - nitrous oxide is c.300 times more powerful than CO₂ as a greenhouse gas. We note that in the case of oilseed rape, which comprises 80% of EU home-grown biodiesel, Crutzen writes that biodiesel produced from it can generate up to 70% more greenhouse gas (GHG) emissions than fossil fuel diesel.

The "default fuel chain" mechanism in the Renewable Transport Fuel Obligation (RTFO) carbon and sustainability reporting system contains default values for nitrogen fertilizer calculated before Prof. Crutzen's research and therefore, this RTFO carbon and sustainability reporting needs urgent review to assess the impact of nitrous oxide in the biofuel production cycle. To highlight, the discrepancy between the Department for Transport figures and the results from the latest science, I attach a Powerpoint slide that shows a graph from the Low Carbon Vehicle Partnership presentation to UK Bioenergy conference Sept 2007 on which I have superimposed the results of Paul Crutzen's work. The WTW GHG 'savings' are on the other side of the zero axis after Crutzen's work (attached). For UK/DEFRA concerns, the oilseed rape figures must be of great concern. A UK expert in this area is Dave Reay from Edinburgh University (see: <http://tech.groups.yahoo.com/group/biofuelwatch/message/1376>). He has commented on the ethanol aspect of this work - that with the US Senate aiming to increase maize ethanol production sevenfold by 2022, greenhouse gas emissions from transport will rise by 6 per cent. Your review may wish to speak with him.

Thank you for inviting our contribution. Please keep me informed of the future work on this review.

Best regards

Dr Andrew Boswell