Rt Hon Philip Hammond MP
Secretary of State for Transport
Department for Transport
Great Minster House
76 Marsham Street
London
SW1P 4DR

31 May 2011

Dear Secretary of State

Transport Biofuels Consultation

The purpose of this open letter, signed by members of the UK's scientific community, is to call on you and your colleagues in the Coalition Government to rethink the present policy on transport biofuels.

We write to you now in light of the Department for Transport's ongoing consultation on biofuel in UK petrol and diesel.

We note that the government's National Renewable Energy Action Plan (NREAP) indicates that almost all (94%) of any proposed increase from the current target of 5% by 2013 to about 10.3% of renewable energy in transport by 2020 will be met using current (i.e. first-generation) biofuels.

As I am sure you are aware, in recent years much research has emerged, both in the UK and worldwide, which conclusively reveals that the industrial production of crop-based ("first-generation") biofuels will have the perverse effect of causing more, not less, global warming than the fossil fuels they were meant to replace, as detailed below. Rather than reduce our national greenhouse gas (GHG) emissions, under the government's proposed biofuels plans it has been estimated that those emissions will in fact substantially increase, adding millions of tonnes of carbon dioxide emissions every year.

We believe that the Government – and the EU – have failed to take account of two key factors:

1. The additional demand for grains, oilseeds and sugars brought about by increased biofuel production will indirectly bring about the conversion of land currently under forest or other natural ecosystem into agricultural land, with the concomitant release into the atmosphere of carbon stored in trees and soil. This land is not necessarily in the UK, or even in the EU, but may be anywhere in the developing world. The increase in global warming engendered by the carbon release from this so-called indirect land use change will cancel out any benefit derived from the biofuel for decades or even centuries to come.
2. The high application rates of nitrogen fertilisers required for maximum grain, oilseed and sugar production lead inexorably to increased emissions of the GHG nitrous oxide, which has a global warming impact 300 times that of carbon dioxide. Research

has demonstrated that, when proper account is taken of these emissions, first-generation biofuels based on cereals and temperate oilseeds can actually increase global warming, irrespective of any land-use change issue.

Beside these established scientific arguments, encouraging production of first-generation biofuels also raises serious moral questions. The increased threat to food security for many of the world's most vulnerable people, which has subsequently sparked protests worldwide, is an inevitable consequence of the increased competition for agricultural commodities coming from the biofuel industry.

We urge the government to take these issues into consideration during the consultation. We should emphasise that we are not necessarily opposed to all biofuel developments but we do believe that the Government, and the EU, must assess all biofuels feedstock–by–feedstock, taking account of the potential inherent in future-generation biofuels, and identify those biofuels that can be produced in a truly sustainable manner. So-called "second generation" biofuels based on cellulose appear to have potential to genuinely reduce greenhouse gas emissions, though land-use change and other impacts still have to be taken into account. Deriving local energy from crops may also be appropriate in rural areas, remote from an electricity grid, especially in developing countries.

For all biofuels, it needs to be demonstrated that they reduce GHG emissions substantially, pose no significant land use issues, do not threaten people's food security, and do not risk conservation conflicts. We hope the UK government, by making such an assessment, will provide leadership on this pertinent issue around the world.

Yours sincerely,

[signed]

Prof Keith Smith, Sen. Hon. Professorial Fellow, Univ. of Edinburgh.

Also on behalf of:

Dr David Reay, Sen. Lecturer in Carbon Management, Univ. of Edinburgh

Prof John Grace, Emeritus Professor, Univ. of Edinburgh

Prof Peter Gregory, Director, Scottish Crops Research Institute, Dundee (until March 2011); Chief Executive, East Malling Research and Professor of Global Food Security, Univ. of Reading (from 1 May 2011)

Prof Paul Jarvis FRS, Emeritus Professor, Univ. of Edinburgh

Prof David Powlson, independent scientist; Visiting Professor, Univ. of Reading

Prof Pete Smith, Royal Society-Wolfson Professor of Soils & Global Change, Univ. of Aberdeen

Prof Patricia Howard, Hon. Professor, Centre for Biocultural Diversity Studies, Univ. of Kent, Canterbury, and Professor, Dept. of Social Sciences, Wageningen Univ., The Netherlands

Prof Gareth Edwards-Jones, Professor of Agriculture and Land Use, Bangor Univ., and Waitrose Professor of Sustainable Agriculture, Aberystwyth Univ.

Prof Neil Burgess, Professor of Conservation Biology, Univ. of Copenhagen, Denmark

Dr Mae-Wan Ho, Director, Institute of Science in Society

Prof Peter Saunders, Emeritus Professor, King's College London

Dr Dominick Spracklen, Senior Research Fellow, Univ. of Leeds

Prof Gail Taylor, Professor, Biological Sciences, Univ. of Southampton, and Visiting Professor, Imperial College, London

Dr Ben Phalan, Department of Zoology, Univ. of Cambridge

Dr Mark Sutton, Coordinator, EU Nitroeurope Programme, CEH, Edinburgh

Prof Alan Williams CBE, SPEME, Leeds Univ.

Prof Janet Sprent OBE, Emeritus Professor, Plant Sciences, Dundee Univ.

Dr Andy McLeod, Reader, Univ. of Edinburgh