This response was submitted to the consultation held by the Nuffield Council on Bioethics on *New approaches to biofuels* between December 2009 and March 2010. The views expressed are solely those of the respondent(s) and not those of the Council.

Professor Peter Guthrie, University of Cambridge

QUESTIONS ANSWERED:

Question 1

ANSWER:
There is a potential for society to be given an undue sense of security by the move to biofuels. The absence of adequate evidence when the policy to move to increased use of biofuels was a crucial mistake. the problams that have since come to light with large scale switch to biofuels should slow the drive for more and more biofuels.

Question 2

ANSWER:
The most important question is around the handling of uncertainty of major moves towards biofuels. Risks can be measured but uncertainty and the lack of scientific evidence means that there could be consequences of which we are currently entirely unaware and unable to define.

Question 3

ANSWER:
I regard my knowledge as general and non specialist

Question 4

ANSWER:
Large scale trials, at a scale which allows for systems to be reviewed and not just enlarged scientific experiments

Question 5

ANSWER:
The most advantage would be gained from finding ways to harvest and use existing sources of biomass - from forestry management (at around 10 tonnes per ha per year), from crop residues, and from waste products from food processing, and post consumer. the growing of dedicated crops should be seen as a last resort

Question 6

ANSWER:
The scale of biofuels that is achievable for the UK is too low a percentage of the tota energy requirement to be a significant player in the overall energy security equation

Question 7

ANSWER:

Question 8

ANSWER:

The potentially exciting area from a science point of view would be the development of algae

Question 9

ANSWER:
Advanced plant breeding strategies yes Genetic engineering no Synthetic biology no

Question 10

ANSWER:

Question 11

ANSWER:
lack of interdisciplinary working

Question 12

ANSWER:

Question 13

ANSWER: