QUESTIONS ANSWERED:

Question 1

ANSWER:
It is a Good Thing; They fit well into existing technology (blend with petrol and used in current car engines)so start decreasing fossil fuel use and reduce pollution and emissions today and tomorrow and represent a good short term answer to providing fuels. Optimally standards need to be set to ensure that biofuels are primarily made from wastes and residues or other crops that will ensure that there is not uncontrolled land use change and the fuel is not a net GHG emitter throughout its life cycle.

Question 2

ANSWER:
Do they still allow us to maintain our "fossil fuel habit" when we should be turning towards more innovative technologies. How much land should be be prioritised to be used to grow biofuel crops (i certainly think transport fuels take precedence over crops fed to beef cattle for example) How best can we grow biofuel crops in the ocean using algae and diatoms should be a priority. What type of funding and ongoing policy support should be given to ensure sustainable support from government for biofuels research and infrastructure development and biofuel use to ensure sufficent private investment will occur to sufficiently grow the future generation biofuels industry.

Question 3

ANSWER:
Yes. I did my PhD in biofuels, worked in the biofuel industry after that and i work in biofuel policy research currently. I read government reports, current scientific literature, biofuels news websites and industry and organisation newsletters.

Question 4

ANSWER:
Even though i work in climate change research i think focussing on the reduction of CO2 emissions and the ability of biofuels to reduce CO2 emissions is really a bad focus to have. Biofuels are effective in providing energy security, growing new business (economic sectors as stated in the background), and in reducing immediately harmful particulate pollution and reduce the use of the finite resource of fossil fuels which are all immediate drivers which provide incentives for biofuel investment now. Climate change is not a sufficient main economic driver as the effects are too far in the future or too hard to get policy makers and investors as well as end-users to understand.

Question 5

ANSWER:
First generation fuels, even if they provide moderate GHG savings over their lifecycle, still are valuable in paving the way for the next generation biofuels by growing demand for biofuels through driving sale of flex fuel vehicles, development of and investment into supply chains, and R&D investment which will develop the 2nd generation fuels. Plus first generation production plants can be retrofitted to produce certain types of 2nd generation fuels. A strong exisitng biofuels market supported by ongoing government policy support will encourage furhterinvestment, particularly private investment if they see that there is a good future market in biofuels which will help. New approaches should be tried until it is demonstable that they are not practical or economically viable.

Question 6

ANSWER:
All 3 approaches are required together if a country genuinely wants energy security by having as much of the energy it consumes able to be generated by itself as possible, with a large enough amount of stored energy to allow for energy demand spikes and use diverse type of energy source so the country is not as affected by an increase in the increase in price of one type of energy source than if it was majorly reliant on that particular energy source that had just become expensive. Spreading the risk and economic costs over a number of mostly domestically based sources is a sensible strategy to maintain a secure and constant energy supply.

Question 7

ANSWER:
Green development should be seen as a way of improving economic competitiveness and that biofuels (and other renewables) will supersede fossil fuel technologies and grow the economy, not that it will cost money or be economically less competitive to be green. Countries and industries with a positive approach approach and prepared to make substantial investment into biofuel techologies will have a competitive technology, so economic advantage, so stronger economic growth.

Question 8

ANSWER:
None look more promising as diversity of approach and technologies will allow the most diverse use of feedstock, hence allow as much waste and inedible plant material as possible to be converted to biofuels to minimise the need to grow crops dedicated to biofuel production.

Question 9

ANSWER:
All strategies are required because you need to improve the feedstock plants, which can be acheived with advance breeding techniques, acceptable to the general population. Genetic engineering is required to optimise the production organisms productivity as this will not be acheived through breeding. Synthetic biology is likely to acheive significant advances and improvements in yields and what nature of material can be converted to useful fuels and chemicals so needs to be invested in as this could provide the necessary stepchange in technology to enable the biofuels industry to completely replace the petro-chemical industry.

Question 10

ANSWER:
That big companies do not hinder the development and use of useful technologies by the use of IP protection to block use and progress of biofuel related techologies and developing countries that own IP behind organisms such as plant crops don't hinder progress through being overprotective of their IP. Use and commercialisiation of licensed technologies within a reasonable timescale otherwise a forfit of that license and the IP should be used as clauses in licensing contracts.

Question 11

ANSWER:
Insufficient funding, no focus, lack of coordination of effort. In the UK, the government keeps changing its mind on how much support to give biofuels or if it will support their use as a fuel at all! So no surprise businesses have been slow to make any significant investment. The overreaction to the Gallagher report which drew some very big extrapolations from the Searchinger figures of GHG emissions by corn ethanol

(biased modelling) that led to a reduction in the biofuel volume targets for the UK coupled to tiny dribble of funding put into biofuel R&D&D will not encourage the large scale of private investment needed to have a biofuels R&D industry

Question 12

ANSWER:
Private investment is key! R&D targets need to be concentrated on providing fuels from wastes as cheaply and with as few GHG emissions as possible. Diverse technologies are needed. The market will decide which is the most economially viable and the most acceptable to consumers. Governments need to keep funding academic and SME research but facilitate private investment by tax breaks into biofuel research, manufacture and infrastructure. Also the government must strengthen its support for the use of biofuels by the consumer because a strong biofuels industry will make a better investment proposition. Current govenrment support is fragmented and wishy-washy which is hurting consumer and investor confidence in biofuels.

Question 13

ANSWER:
Yes, but at the moment biofuel crops account for well under 1% of total crop land so it has been used as an excuse for land acquisition and clearing that would have occurred anyway to expand agriculture. However it will boost NGO and consumer confidence if the productivity of land used for biofuel crop growth was maximised while GHG emissions kept to a minimum and highly biodiverse areas preserved. However i still believe forests are cleared in rainforested regions to increase the land owned by wealthy land owners NOT primarily for biofuel crops, this is a convenient excuse

Question 14

ANSWER:
I think certain populations in less developed countries have less ability and legal rights to object to land use change which could lead to them being displaced and in destruction of habitats with high biodiversity by big businesses, often multinationals. Future generation fuels will require less or no land use change as they will be from wastes or grown in water.

Question 15

ANSWER:
Yes, but the assumptions made at the moment in modelling (calculating) iLUC are far too high. As much as 100% iLUC is attributed to clearance due to biofules when it is a lower % of land clearance and other factors include food crop, feed crops, land acquisition. Currently there is no consensus in how to calculate iLUC, which assumptions should be made and there needs to be an agreed standard calculation and set (values) of assumptions made about a set of land types. It is a big research question, and unfortunately any sort of modelling reflects the bias of the modeller.

Question 16

ANSWER:
New approaches based on using wastes will only improve environmental security and will improve economic and energy security by growing hi-tech businesses and increasing domestic energy production

Question 17

ANSWER:
Again, future biofuels will use food waste or feedstocks obtained from non-land utilising sources so there

will be no conflict.

Question 18

ANSWER:
Lack of regulation and legal recourse in the developing world could lead to unsustainable biofuel crop production. The developed world can help prevent this by only buying biofuels properly certified and verified to meet certain sustainability criteria.

Question 19

ANSWER:
No more than with food crops.

Question 20

ANSWER:
No more than with food crops. Responsible consumers will assist workers in the developing world by buying biofuels certified to reach sustainability standards which includes fair conditions and wages for workers.

Question 21

ANSWER:
Public sector is needed to fund academic and start up fundamental research. Public-private partnerships are required to support R&D to develop the technology but private needed to provide the large scale project finace required for commercialistion. Government needs to create a good investment environment and provide tax breaks for sustainable investment (they were happy to bail the banks out..)

Question 22

ANSWER:
That any policies to promote them so far have undergone constant erosion and suffer from lack of clarity or long term approach is not providing a secure investment environment for biofuels. I would say that the wishy washy policy support for biofuel R&D, investment and mandatory targets demonstrate a real lack of political support for them and incredibly weak leadership by allowing reactionary luddite NGOs who think they are environmentalists and half-baked modelling by politically biased researchers to set crucial energy policy.

Question 23

ANSWER:
To set policies which systematically increase the use of biofuels, so grow the market, which will drive private investment into R&D&D as biofuels will be seen as a viable business. Until this occurs there will never be significant investment into the type of R&D which will create step change technologies. The USA is ahead in R&D for second gen fuels because they have an existing biofuel business thanks to the distribution and use of first gen corn ethanol which has grwon the biofuel market and means there are suitable flex-fuel vehicles on the road which can use the 2nd gen fuel.

Question 24

ANSWER:
Strong message to government - Start backing biofuels now - Set policies to provide stronger support for

fuels from wastes. Stop being swayed by pictures of orantutans from the green luddite brigade. Question land use change data based on numbers that bear no relation to reality and recognise that current modelling of biofuel GHG data is about as scientific as astrology. Biofuels can be fed into the current supply chain now providing GHG savings and lower local particulate air pollution compared to fossil fuels which will provide savings in health care costs. Strong investment and support now will help the economy by growing a sustainable industry that can overtake the current fossil fuel based economy.