RESET INQUIRY, CALL FOR EVIDENCE RESPONSE

About me:

My name is Chris Roffey. I am an early retired Science and Computer Science teacher. I now organise a UK Computing challenge on behalf of Oxford University and Raspberry Pi. I am also an author of programming books for children and a husband and parent. I am writing as an individual because I am very concerned about the future we are leaving for our children. I have researched solutions for all the major problems we face, driven by a need to be able to look my children in the face. I believe that solving the climate crisis could be relatively easy for us, if we work together, and achievable a lot sooner than 2050 but the problem is how to create a World that is carbon neutral and sustainable, while taking account of the political world we live in. This is what I have turned my mind to more recently.

I am willing to present my evidence to MPs in an online evidence session.

Responses to questions in Reset Inquiry - Call for Evidence.pdf

Part 1, Q1:

- Housing and homelessness: It should not be just during a pandemic that we ensure homeless people have access to housing/hotels
- Transport and travel, including cycling and walking: I live inside the M25 and the congestion disappeared during lockdown. It cannot be right to allow us to turn our roads back into traffic jams again, unfortunately we are nearly back to where we started already. It is my view that building more roads will simply encourage more cars to use them rather than make the journeys any better.
- Employment: Things have changed. It makes no economical sense to try to return things to the way they were. Many industries should not continue at pre-pandemic levels and there will be job losses. To allow the country to adapt to a new economic situation we should be investing in new jobs, providing a living wage and taking other measures to ensure people who were unlucky enough to be in industries, such as airlines, to have the chance to retrain and find other gainful employment whether this is creatively, as entrepreneurs or in new green industries.

Part 1, Q4:

The pandemic has revealed a political system that has competitiveness built in and encourages short-term planning. Politicians find it almost impossible to admit mistakes. It also appears that the fundamental duty of government (to look out for the welfare of its people) has been forgotten during the Brexit years. It was well known that one of the biggest threats to our population and the most imminent was a pandemic[1,2,3,4,5] and yet the country allowed its stockpiled resources to go out of date and (unlike other countries) had no plan to shut borders, test, trace and isolate, ready to implement straight away. Competitive politics, ideological priorities, short-termism, an inability for politicians to admit mistakes, and forgetting a fundamental duty of government - all lead to very poor decision making. For example, after seeing how Bournemouth beach got overwhelmed suppose the government wanted to change its advice about allowing people to travel as far as they want to in England. This is very difficult to do effectively (and have people follow the rules) if you are not able to stand up and say: "we made a mistake". Unfortunately this type of governance is currently seen as a climb down and U-turn instead of a strength.

Collaboration and finding common ground, while looking at how decisions will affect the future generations has to be built in to a new system. Listening to science and evidence and acting on it has to be important. Something like the Welsh Future Generations Act[6] could help a great deal in the short-term.

Part 2, Q1:

The primary aim should be to produce a Carbon free economy with the same urgency that was needed for the pandemic. The independent scientific evidence[7] is telling us we are in an emergency and the longer we take to act the harder it will be to fix it. There are also several tipping points that we cannot afford to play Russian Roulette with. Progress should be monitored continually and lessons learnt from well-meaning projects that are started and turn out to have less than perfect outcomes. This way we can quickly produce an adaptive solution rather than plan unendingly.

Part 2, Q2:

a. The pandemic has randomly selected some industries that have prospered and others that have met catastrophic problems. A civilised country should look after those that have been adversely affected in such situations.

b. Policies that stop temperatures rising to 1.5^{o}C above pre-industrial temperatures are also going to favour some industries above others. Again, individuals adversely affected should be given protection. However, big industries generally require the same kinds and groups of employees. If the government chooses not to bail out the airlines or build new roads, they may worry about job losses. But if they instead, for example, invest in building wind turbines every mile along every motorway in the UK and replacing fossil fuel power stations with power storage facilities, many of the jobless will be able to quickly retrain in these new industries. Similar managers, technicians, developers, manufacturers, etc. will still be needed, just in more useful employment. This will require suitable safety nets for those initially made unemployed, such as, a living wage and mortgage and rent protection schemes.

Part 2, Q4:

All of these suggestions have merit. However, there is an assumption to this question that we are going to lose jobs rather than change jobs. There will definitely be job losses for many but we may, if we do the right thing, generate a need for many new jobs that will need filling quickly. Mortgage and rent support schemes for those made redundant will be required in addition to items 1, 3 4 and 5 mentioned in the question. A universal basic income will also be needed but this can be made dependent on applying for the new key worker roles required for a green recovery, while these industries are accelerated - a kind of "war effort".

Part 2, Q5:

There should be no support for industries that contribute to carbon emissions at all. They should be allowed to fail or fall to a new natural level. This has happened many times in history (the industrial revolution, the invention of the car, electricity and the internet.) Flights will naturally become far more expensive and only available for important journeys (if the industry actually redesign plane interiors so they are safe in a world where pandemics are always likely). This is fine - as long as the redundant workers are supported and new green jobs created. The BBC, etc. should probably be showing travel programmes extolling the benefits of taking vacations in our own tourist areas rather than abroad. This again would reduce travel while supporting local businesses, who are likely to struggle from lack of foreign tourists.

Part 2, Q11:

If the UK can get its house in order, and quickly, it can act as a model for other countries to follow. I suggest that this is the only way to lead in the current polarised world - don't preach, show. There are plenty of ways to become carbon neutral but even more ways to avoid making a realistic start. Here are some principals I would recommend keeping in mind:

- Search for and implement policies that can be done now rather than wait for new technologies.
- Prioritise technologies that will not limit us in the future.
- Make as big an impact as possible with what is available now rather than wait for newer technologies
- Find policies that sit in the intersection of all political view points and implement them now rather than put them in a manifesto to be considered by a confused electorate in four years time.

The incumbent government has a lot on its plate at the moment and desperately wants to deliver its ideological programme. However, it also talks about making a green recovery so, perhaps we can assume that it would not vote against privately brought, well-researched bills that make economic sense to it, that do not impede the deliverance of its manifesto and that are likely to be popular with voters. Such policies would also have to be palatable to MPs from other political parties if they are to gain a majority. In other words they should somehow have universal merit. I believe that climate change is happening so rapidly now that we cannot wait for another election to contemplate and weigh up a new plan. It is necessary for cross-party working groups (that also include experts from the scientific, engineering, relevant industries and fiscal planning communities) to formulate well thought out bills that can be put to parliament one after the other until this is seen as an acceptable form of agile, coorperative intervention. Below are listed some potentially politically neutral policies but first it would be important to find some easy, no cost, no-brainer policies to set a precedent such as 1 and 4 below, or policies that will be universally popular such as 3.

Examples of potential policies:

1. A bill to restrict all publishers of video content (via TV or the web) entering the UK to 2GB per hour. This limits movies on TVs to HD level rather than 4K. This is the same as in most digital cinemas! It costs the government nothing and in fact allows them to impose fines on uncooperative companies. It is politically neutral and will go some way to limiting the ever increasing need for server farms that are a major contributor to CO_2 emissions. It also paves the way for later tweaking down and encourages tech companies to concentrate on quality from lower bandwidth rather than ever expanding screen size. It is also easily copied by other countries.

2. Go completely electric. This is not a small target! In 2014 the UK's energy use was 2,249TWh of which electricity was 335TWh[8] (15%). The reason to do this is that the majority of the other energy is fossil fuel based and so has to ultimately go. Electricity can be produced by renewables and is the most flexible energy source being easily converted into light, heat, motion, etc. As we create a country that runs on electricity, future better ways of generating it can easily be plugged in. We could invest in retro-fitting houses with modern insulation standards (up to a point) but after the low-hanging fruit such as roof-insulation and cavity walls are done this become very expensive. Better to remove gas from the equation. To start with build thousands more wind turbines. To make this politically neutral they can be used to generate jobs and situated along the sides of all our motorways. This gives easy access for building and maintenance and stops people worrying about their views. Wind turbines are temporary structures compared to nuclear plants and can be built and erected very quickly. In three years we could have a green power supply that means we will no longer need to import energy. The investment then will start to pay back so is economically sound. There are complications: Energy stores will be required but these can be a combination of hydrogen production facilities and compressed air plants. Both available now and job generating. Excess hydrogen can be used to power motorway lorries, buses and trains. Fuel cells actually make sense now for these but not for cars.

3. Provide grants (and jobs) to replace central heating with electric air-conditioning in UK homes. Electric boilers are four times more expensive than gas boilers because electricity currently costs four times as much as gas! Make electricity more plentiful and renewable and this will no longer be the case. In the UK, fitting domestic air conditioning in place of central heating will be a popular and green choice as they are heat exchangers that produce 3 times as much heat as they consume in energy[9] (and in the summer can cool the house down on the hot fortnight we sometimes get).

4. Make it mandatory that all electric cars have grid tie systems that allow for the vehicle's battery to be utilised as a power wall / national energy store. There are several companies researching and supplying these systems[10].

5. Buy the battery scheme: Governments of whatever ideology do not want to subsidise electric car purchases because economically it is not only throwing money away but, if successful, will reduce tax revenue from petrol in the future. Perhaps the answer is to for the government to introduce a scheme that offers to buy the car battery for the consumer because, over their life times, EV cars are now more economical to own than their petrol equivalent[11]. It is the upfront cost that is the blockage. If a car is bought this way, the all-electic car becomes less expensive than its equivalent[12,13]. The government pays large sums of money at the start of the scheme while interest rates are low but mileage is monitored and every month a bill is issued to the EV car buyer that is slightly less than the cost of filling up the equivalent car with unleaded. This makes economic sense because the battery will get paid for (assuming current prices of batteries) but these prices are still falling quite rapidly. Some money is coming in to the government while money is going out but, in the end the government will win so it is not money being thrown away. What is more, by doing it this way, the costs and therefore outlay and income can be tweaked in future budgets. So it is an investment rather than a loss for governments, for consumers it encourages purchase of a car that is cheaper to buy, greener and costs less to run and generates jobs. As long as it is accompanied by a massive increase in green electrical power production (see above) every one wins.

6. Design a people's car: The government sponsor's the design of a people's electric car that is relatively small, has a grid tie system, a mileage billing system (see 5 above) and can be manufactured under a low cost licence by any car manufacturer. By doing this it might also be possible to design a standard quickly replaceable battery unit that can be hot-swopped at converted petrol stations, thus getting rid of range anxiety.

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The key to all these is that they are apolitical by being green, job generating and probably economically sound (some would need fiscal analysis to be sure) at the same time. Therefore they could be implemented straight away, one policy at a time, (with all party support). These are simply examples of a way to proceed (I have more!) but the key to open them up is to invest massively in renewable (mostly wind in the UK) energy so we can be independent of energy imports and achieve our Paris climate targets. If this is done with a sense of urgency and determination there is no reason that the bulk of the infrastructure cannot be built within three years, while ensuring good levels of employment and a sustainable infrastructure for the future that will only improve further as time goes on. Other countries will copy!

References:

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3. BBC Four / Dr. Hannah Fry, *Contagion,* citizen science experiment, 2017-18: https://www.bbc.co.uk/programmes/articles/3pYGfsq0NKB1bNkrggYJl4h/about-bbc-pandemic

4. There was a film about the dangers, 2016: https://en.wikipedia.org/wiki/Pandemic_(film)

5. There was even a very successful and accurate board game made in 2008, still played today: https://en.wikipedia.org/wiki/Pandemic_(board_game)

6. https://www.futuregenerations.wales/about-us/future-generations-act/

7. The Interrgovernmental Panel on Climate Change https://www.ipcc.ch/

8. https://en.wikipedia.org/wiki/Energy_in_the_United_Kingdom

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11. https://www.thisismoney.co.uk/money/cars/article-8540469/Electric-vehicles-CHEAPER-petrol-cars.html

12. https://www.statista.com/statistics/797660/battery-share-of-electric-vehicle-cost-by-segment/

13. Example Peugot 208 Allure Premium cheapest petrol is £16,217, most expensive petrol is £17,467 and all-electric is £25,088. If government paid for battery at 40% of cost the all-electric would cost the consumer £15,053: https://indd.adobe.com/view/960819d9-c4a4-41f0-808a-0fd2bfd2e2cd

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