Jet Zero: our strategy for net zero aviation

Consultation Response

September 2021

Summary
This paper is Transport & Environment's (T&E) response to the questions posed by the consultation *Jet Zero: our strategy for net zero aviation*

T&E is Europe's leading clean transport think tank and campaigning group. It was created as a member organisation over 30 years ago and now has staff in 6 countries, with 63 member organisations across 24 countries. It has had a UK office since 2019. T&E coordinates the International Coalition for Sustainable Aviation, which has observer status at the International Civil Aviation Organisation (ICAO); and is also an active member of the Jet Zero Council's SAF Delivery and commercialisation groups.

In common with many UK businesses, UK aviation has had a torrid 18 months. However, prior to this, it was on a high. In 2019, UK aviation carried over 300m passengers, which was far and away the highest out of the European nations (of the other nations, only Germany and Spain carried over 200m). This came at a massive environmental cost: in 2018 the industry emitted 38.2 MtCO2e. The UK was the third highest emitting nation globally, behind only the USA and China. Emissions from the sector had risen by 125% versus a 1990 baseline. This compares poorly to the overall territorial emissions from the UK, which declined by 43% in the same time period. Clearly this is an unsustainable situation that cannot be allowed to continue, and T&E welcomes this strategy consultation: an attempt to correct this environmental anomaly.

T&E believes that there should be a major technological push when it comes to aviation, as this is the only way to get to zero emissions from the sector. However, this technological push needs to happen at the same time as controlling the growth of emissions from the sector. There are some welcome proposals and commitments in the consultation. Reviewing the free ETS allowances the sector receives, and consulting whether to extend the ETS to the non-CO2 gases are good policy developments that are a natural extension of the polluter pays principle. Equally, providing environmental information on specific flights to consumers simply allows better choices to be made. The only airlines that should fear this are the ones that have poor environmental records. The proposed SAF mandate is also welcome. T&E has responded to the SAF mandate consultation, so will not go through the detailed responses given there, here: suffice to say the requirement on fuel suppliers to supply SAF is welcome, although since the underlying reason for lack of uptake of SAF is the price differential between it and fossil kerosene, T&E

questions why the UK is not following the European Commission's lead and a tax on fossil kerosene has not been proposed.

However, T&E believes there are three major flaws in the consultation approach:

1) *That the Government is but one of a number of interested parties*:
   This is simply incorrect. The Government should accept that it is, at the very least, "first amongst equals". All political parties pledged to put the nation on a net zero path: indeed, it was one of Boris Johnson's "guarantees". This democratically-backed mandate ensures that the Government - and the policies that it chooses to implement - are *required* to become the main driver to decarbonising aviation.

   The choices made by the UK's Government over the next 18 months will determine if the UK is a genuine climate leader. As an example, this is a line taken directly from the consultation (found in paragraph 3.36): "*most projections suggest there will be residual CO2 emissions from aviation in 2050".* Whilst this has been true of historical projections, the government can choose to pursue policies that mean there will be no residual CO2 emissions. This means that 100% of the jet fuel supplied should be SAF in 2050. This gives the aviation and fuel industry 29 years to prepare accordingly: more than enough time.

2) *The "ambition-to-action" gap.*
   There are no suggested policies that will *require* the industry to adopt zero emission aircraft or research and develop greenhouse gas removals. This is in direct contrast to the proposed sustainable aviation fuel (SAF) mandate consultation, which will require fuel suppliers to source and supply increasing quantities of SAF. Without requirements, there is little to no incentive for the industry to pursue these other needed decarbonisation tools. In short, T&E questions why there are many carrots, and few sticks: the balance is not appropriate.

3) *Onus on Government*
   Implicit throughout the consultation is that the onus is on the Government to ensure that there will be enough greenhouse gas removal options in place by 2050 for the aviation industry. T&E questions why the onus is here, instead of the onus being on the airline industry to ensure that there are enough. Implicit in the assumptions made in the scenarios is that the airline industry should be allowed to pollute in 2050 with these emissions 'net off' via a GGR industry that has been funded by the government prior to this. Why should taxpayer money fund this? Instead, the onus should be on the industry to fund the creation of this market, since it is the industry that wants to be allowed to pollute after the date the UKs net zero commitmentment has passed.

One clear weakness of the consultation document is the complete absence of proposals to curb the growth of demand. The technology options outlined will have a negligible effect on emissions over the next decade, and there is a huge risk that the technological solutions proposed are simply not adopted at a sufficiently fast rate. T&E questions why there are not any demand policies that would restrict the growth in demand, nor why there is no mention of what actions the government would consider should the proposed technological solutions not make sufficient progress. In 2019 aviation emitted more

greenhouse gases than it ever had in any other year. The Government should ensure that 2019's levels are never reached again.

It is the role of the government to ensure that the breakthroughs on zero emission aircraft and SAF come to pass. This should not be done by fully funding these breakthroughs, but by putting the enabling conditions in place to ensure that private capital moves towards SAF and ZEA research, design and production. These enabling policies should be a combination of both carrots and sticks.

The SAF mandate will provide certainty to long-term capital investors that there will be a minimum level of demand for any produced SAF. There is nothing in place, yet, to provide certainty to investors that there will be demand for zero-emission aircraft. This needs to be remedied by the Government.
As has happened in other industries where the UK has banned the sale of fossil fuel using products, this should happen in the aviation industry - with the government banning the use of non zero emission planes for domestic use from 2040, and the uplift of fossil kerosene from 2050.

Finally, a warning. There is no sense of urgency conveyed in the consultation document. Both Boris Johnson and Grant Shapps stated in July 2020 that the UK's ambition is to achieve transatlantic zero emission flight within a generation. Assuming that a generation lasts for 25 years, then we have already lost 4% of our allocated time. Indeed, every quarter that passes is another 1% gone. If the industry is to be net zero by 2050, we have to get on with it.

Below are T&E's specific answers to the questions posed:

1) Do you agree or disagree that UK domestic aviation should be net zero by 2040? How do you propose this could be implemented?
Yes, T&E agrees that domestic aviation should be net zero by 2040. However, this target is too low: in fact T&E believes domestic aviation should be zero emission by 2040. The UK government has, over the last year, positioned itself as a global leader in zero emission plane design and development. What is missing, so far, is any form of regulation or policies that will force domestic airlines to purchase and use zero emission planes. This regulation should be proposed, consulted on and made law relatively soon, so airlines have the maximum length of time available to prepare.

Contrast this with the Government's position on phasing out fossil-fuelled trucks. Zero emission trucks above 26 tonnes are not yet commercially available, but the recent Transport Decarbonisation Plan (TDP) has committed to consult on putting in place a 2040 phase-out date for all sales of these trucks. Furthermore, the TDP implicitly suggests that these policies will create manufacturing jobs in the UK. There is no reason why aviation policies should not emulate these truck policies, and no reason why zero emission planes cannot be manufactured in this country.

2) Do you agree or disagree with the range of illustrative scenarios that we have set out as possible trajectories to net zero in 2050? Are there any alternative evidence-based scenarios we should be considering?
These scenarios are all realistic, but are missing other, equally realistic scenarios. For instance, one missing scenario is where the UK government and UK aviation, for whatever reason, fails to ensure there

is a sufficiently sized GGR market in 2050, and that therefore the majority of aviation's emissions cannot be offset. How high will emissions from aviation be then? And at what level would a future government step in to restrict emissions from the industry?

The high ambition scenario shows the industry still emitting 21 MtCO2 in 2050 - which is simply not ambitious, let alone "high ambition". A truly high ambition scenario would have the industry emitting no net carbon emissions in 2050: this would mean that a healthy percentage of flights had been switched to zero emission planes, whilst the rest ran on sustainable aviation fuel that had no residual carbon emissions (and please note that under this scenario there would still be residual non-CO2 emissions). This is by far the best option for the environment - and something that is achievable. Surely the Government, which controls all the levers to put this scenario in place, should be aiming for the highest ambition possible?

3) Do you agree or disagree that we should set a CO2 emissions reduction trajectory to 2050?

- ***a) Should the trajectory be set on an in-sector CO2 emissions basis (without offsets and removals) or a net CO2 emissions basis (including offsets and removals)?***
- ***b) Do you agree or disagree with the possible trajectories we set out, which have in-sector CO2 emissions of 39 Mt in 2030, and 31 Mt in 2040 and 21 Mt in 2050, or net CO2 emissions of 23-32 Mt in 2030, 12-19 Mt in 2040 and 0 Mt in 2050?***

Yes, T&E agrees that there should be a CO2 emissions reduction trajectory. Following on from the above answer, T&E believes that there should only be an in-sector CO2 emissions trajectory which should arrive at zero in 2050 (and this would still mean there would be non-CO2 warming from the sector).

Along with an emissions trajectory there needs to be details as to how the government will ensure that aviation does not stray from that trajectory. Completely missing from this consultation are any policies that will restrain emissions in the near term: this is in direct contradiction to the "code red for humanity" contained in the August 2021 IPCC report, which emphasised the need for short-term reductions. Since emissions could clearly grow past any proposed scenarios, the government should have some form of 'backstop' in place to prevent this.

2019 should be set as the high point for emissions from UK departing planes. Incredibly, the proposed high ambition scenario shows an increase of 3% in 2030's emissions compared to 2018. Planning to have more emissions in a decade is simply not ambitious.

4) Do you agree or disagree that we should review progress every five years and adapt our strategy in response to progress?

T&E believes that progress should be reviewed at a faster pace than every five years, for the simple reason that too much could change in any five year period. Instead, progress should be formally reviewed annually.

As an example, minor legislation was passed that amended the RTFO in 2009, 2011, 2013, 2015, 2018 and 2020. Whilst a strategy is not legislation, it is clear that amendments will be needed on an ongoing basis.

5) Do you agree or disagree with the overall approach to improve the efficiency of our existing aviation system?

T&E agrees that improving the efficiency of the system should be encouraged. However, caution should be exercised here. The consultation rightly points out that CO2 emissions per passenger have fallen since 1990 and 2010. However, at the same time total carbon emissions from UK aviation have risen. Put simply, the emissions savings from more efficient planes have been offset by extra emissions from more flights, and this resulted in 2019 being the worst year in emissions terms, but the best in carbon emissions per passenger terms. As mentioned above, there is no mechanism proposed in this document to restrict absolute emissions - the only number that counts when considering UK aviation's contribution to climate change - from flights past a benchmark level. This is a major flaw in this strategy.

The following are specific responses to proposed points in the Jet Zero Consultation:

3.8: It is correct that current conventional aircraft can be replaced by far more efficient models, however there is nothing in this consultation that would require airlines to do so. This could be achieved by increasing VAT on landing fees for older aircraft. Another suggestion would be to simply ban planes over a certain age from landing at UK airports. Regardless of which method is chosen, something needs to be put in place that ensures UK departing planes are relatively modern and fuel efficient planes.

3.9: Decarbonising airports is important, but doing so should not detract from efforts to decarbonise planes and fuels, which is where efforts should be focussed. Airports emissions only account for a few percentage points of total UK aviation emissions. Since all ground based vehicles (tugs, buses, etc.) could already be electric, and airports can already put in place power purchase agreements with UK renewable suppliers (including biomethane suppliers for heating requirements) then there is virtually nothing stopping all airports being zero emission relatively soon. An ambitious government could require that all airports are zero emission by 2030 - and the airport industry could achieve this with relative ease.

3.11: Tankering is a problem that already exists. A 2019 Eurocontrol think paper estimated that full tankering already occurs on 15% of flights, and partial tankering on a further 15%. A 2019 BBC Panorama investigation revealed that British Airways caused an extra 18,000 tonnes of carbon emissions through the practice in 2018. British airlines already engage in this practice: that is, they have already voluntarily chosen to increase profits instead of reducing carbon emissions. T&E believes the government should follow the European Commission's proposals and require airlines to uplift from the UK at least 90% of the jet fuel they require to reach their end destination. This is an innovative proposal specifically designed to stop tankering, which will strengthen the effectiveness of the EU's proposed SAF mandate. The UK should copy this rule (and in the process help set a precedent that could then be rolled out globally).

Our new policy proposals: As mentioned above, tankering already happens, and T&E questions why airlines would stop the practice when they are not required to. Tankering will only occur when there is a price differential between fuel costs at different airports. Furthermore, it will only happen on short-medium length flights to another country. In effect, for UK departing flights, tankering will only potentially happen between the UK and Europe. Therefore the UK should ensure that policies that change costs on fuel are broadly aligned with Europe. The European commission has recently proposed taxing

kerosene, and has also proposed implementing a SAF mandate: two measures that the UK should implement.

Additionally, and as mentioned above, the VAT system should be used to incentivise and disincentivise certain things. VAT charged on landing fees should be zero rated for zero emission aircraft. Conversely it should be high - 40% or more - for older, more polluting planes.

6) What more or differently could be done to ensure we maximise efficiency within the current aviation system?

Banning planes over a certain age from using UK airports would mean that the UK benefits from the efficiency gains obtained from newer classes of aircraft. Without this requirement, it is entirely possible that older planes continue using the UK, and maximum efficiency would not be ensured in the current system.

SAF should not be reserved for PSO routes. Since a unit of SAF displaces a unit of fossil kerosene, it has the same lifecycle carbon reduction quality wherever it is put into the pipeline system. Therefore, transporting SAF specifically to serve planes on certain routes would actually increase carbon emissions overall, via increased ground transport emissions. T&E believes that the UKs domestic aviation policies should focus on converting all UK-only flights to zero emission planes in the shortest time possible. The UK should follow Norway's proposal to have a zero emission domestic aviation market by 2040.

7) Do you agree or disagree with the overall approach for the development and uptake of SAF in the UK?

Broadly, yes, T&E agrees with the policy of putting in place an increasing mandate. This is, and always will be the main policy driver for increasing the amount of SAF uplifted in the UK. Many of the proposals in the SAF mandate consultation are to be welcomed. T&E has submitted a response to the mandate consultation.

One major concern with the mandate proposals should be flagged here, and that is the fact that proposals for e-kerosene are relatively underdeveloped. All of the waste-based SAF pathways are resource constrained, whereas e-kerosene is, in theory, limitless (although in practice is limited by electricity constraints). The European commission has proposed to the EU's member states that a minimum percentage level of fuel supplied should be synthetic from 2030 onwards. This minimum share rises to 28% by 2050. The UK should copy this example and set a UK e-kerosene mandate that, at the very least, matches, and ideally exceeds the EU. Additionally, the UK should require that at least some of the e-kerosene supplied is produced using direct-air-captured (DAC) carbon. DAC is a future industry which is a critical component of a net zero world - and therefore a future industry that the government should want the UK to become a centre of excellence in.

Additionally, the UK should require that 100% of fuel supplied in 2050 should be SAF: in other words, no more fossil jet fuel should be uplifted from this date. This would align with reports that the USA is also considering the same stipulation, and doing so would provide certainty to fuel suppliers and investors that the long-term future of jet fuel is sustainable.

The UK's government is already a significant purchaser of jet fuel, buying 472m litres (377,600 tonnes[1]) between April 2019 and April 2020, and the Ministry of Defence has already changed its own rules to be able to receive up to 50% SAF in its fuel mix. Therefore, to aid the creation of the UK's SAF industry, the government should tender for SAF supplies from yet-to-be-built UK SAF plants, thus guaranteeing demand for the product in the crucial first few years of production.

8) What further measures are needed to support the development of a globally competitive UK SAF industry and increase SAF usage?

Due to the price differential between SAF and fossil kerosene, the amount of SAF mandated by the government will become the amount of SAF supplied. Therefore, the best way to increase SAF usage in the UK is to a) reduce the price differential by imposing a tax on fossil kerosene, and b) set in place an ambitious, but achievable mandate that ultimately ensures that only SAF is supplied from 2050.

9) Do you agree or disagree with the overall approach for the development of zero emission flight in the UK?

Zero emission flying should be the end ambition for the aviation industry. Both electric and hydrogen-fuel cell aircraft produce no or comparatively minimal non-CO2 emissions. This is in direct contrast to SAF, which, broadly, causes the same non-CO2 problems as current fossil-kerosene. It needs to be stressed how important non-CO2 emissions are - they account for twice as much warming as the carbon emissions, but there are no non-CO2 policies in place. It is therefore extremely important that the UK has high zero emission flight ambitions, since these flights are the only ones capable of causing no net overall warming to the planet.

The steps the government is currently taking are, in T&E's view, broadly correct. However we believe that there are two crucial steps missing:

1) Working with current (legacy) manufacturers means that projects will fall into the natural 3-4 year business cycles. The truly radical, blended wing type projects - ie those zero emission aircraft that may actually have the potential to cross the Atlantic within a generation - are not being funded. This has to change, otherwise the challenge will be missed. T&E believes that some funding should be specifically directed towards longer term projects.

2) There is no mention of any requirement on the airline industry to purchase zero emission planes and fly zero emission routes. This needs to change. T&E proposes a mandate on all airlines that fly domestic routes that means that they are required to fly an increasing percentage of zero emission miles, from a certain date (we propose 2030). Airlines that do not meet the minimum required miles would have to purchase miles from those airlines that do (in a similar fashion to how car manufacturers can 'pool' emissions to comply with European regulations), or face heavy penalties. This policy-driven demand from industry should ensure that the UK becomes the global leader in zero emission aircraft development. Crucially, it would also ensure that airlines invest in this market, instead of relying on constant government - and by extension taxpayer -

[1] Using BP's conversion factor: http://www.bp.com.au/products/aviation/news/BPJETA1.PDF

spending. Focussing on the domestic market will also ensure there is 'bleed-over' into the international market.

T&E has previously published research that demonstrates that If the UK selects the most efficient options for using renewable power in transport (including using batteries and electric road systems for all vehicles), by 2050 it will require 369 TWh - slightly more than the total amount of electricity currently being supplied. If a greater reliance is placed on hydrogen fuel cells in road transport, total renewable electricity demand increases by 15%. If more synthetic fuels are used in road transport, 55% more renewable electricity is needed. In short, to maximise efficiency in the renewables sector and of the resultant future electricity grid, hydrogen should be prioritised for aviation. A requirement for domestic aviation to fly zero emission planes, alongside a sub mandate for e-kerosene as part of the SAF mandate would ensure that priority, by providing a clear source of future demand.

10) What further measures are needed to support the transition towards zero emission aviation?
It is clear that the ambitions laid out in the consultation are very aspirational, but there are no policies that will require airlines to move towards purchasing and utilising zero emission planes. The zero emission miles flown mandate, proposed above, would solve this. Furthermore, if implemented it would, overnight, make the UK a more attractive place for all zero emission aircraft manufacturers worldwide. It would force airlines that serve domestic routes to start partnering with these manufacturers.

Zero emission routes will be a required first step, since commercial zero emission flights need to take off from one airport and land at another - and T&E believes that government support will be needed for the airlines and airports that step up to provide the first flights (at least four airports: two for electric aircraft and two for hydrogen fuel cell aircraft). There are pros and cons to using PSO routes. These routes are already not commercially viable, (although may be in the future with the reduced running costs of running electric aircraft), so caution should be exercised when investing in them. Ultimately, all airports that serve domestic routes would have to upgrade their facilities - much as they do on an ongoing basis now. What is not clear is what the split will be between electric and hydrogen fuel cell flights, and therefore exactly what infrastructure upgrades will be required at which airports.

11) Do you agree or disagree with the overall approach for using carbon markets and greenhouse gas removal methods to drive down CO2 emissions?
The commitment to strengthen carbon pricing for aviation is welcome. For too long large parts of UK aviation's emissions have not adhered to the polluter pays principle - most carbon emissions from UK departing flights have not been priced, and non-CO2 pollutants have never been priced.

T&E analysis of the UK ETS shows that airlines will benefit from 4.4 MtCO2 of free allowances in 2021, which would cover *at least* 41%[2] of the carbon emissions that fall under the scope of the scheme. This is - clearly - in direct violation of the polluter pays principle.

Therefore, the UK government should now implement changes to the UK ETS. These should be announced soon, to allow the industry as much time as possible to prepare for the changes:

[2] Emissions under the UK ETS scope are estimated from in-house T&E calculations of 2019 emissions based on the ICAO calculator methodology, using AIS aircraft data for 7 weeks, purchased from PlaneFinder. In the next couple of years, this percentage share will probably be much higher due to reduced air traffic because of the COVID-19 pandemic.

1) Free allowances should be withdrawn by 2027 at the latest. This matches the recent proposals from the European Commission. If this requirement isn't matched, airlines that serve European routes would be in the ridiculous position of being charged for all their carbon emissions when departing Europe, and only some when departing the UK - and would clearly show a vacuum of climate leadership. Genuine climate leaders would ensure that free allowances are withdrawn before 2027.
2) The minimum number of flights per four months requirement should be withdrawn - meaning that no commercial flight would be exempt from surrendering allowances for the carbon they are producing.
3) The UK ETS should be expanded to cover all UK departing commercial flights, regardless of destination. Long haul flights account for the majority of UK aviation's emissions, and it is nonsensical that the UKs preeminent carbon pricing scheme does not cover UK aviation's preeminent source of carbon emissions.
4) The auction reserve price should be ratcheted up from its current price of £22 over time, which will have the effect of airlines investigating and investing in lower and zero carbon options. Forward guidance on these figures, announced soon, will provide airlines with the policy certainty that is needed to ensure sufficient investment in SAF and ZEA. This is in direct contrast to the government's current intention, which is to withdraw the auction reserve price. The Government's current approach would provide less certainty for business, and decrease the chances of up-front investment in zero emissions aviation and negative emission technologies.

Implementing these changes would also match the implicit ambition laid out in section 3.3 of the *Jet Zero Consultation: Evidence and Analysis* document: that of ensuring that carbon pricing is applied to 100% of UK aviation.

Furthermore, a non-CO2 UK ETS charge per surrendered allowance should also be implemented. Whilst it is true that non-CO2 warming effects are not proportional to the amount of carbon burned, it is also true that the overall warming effects of non-CO2 emissions are firmly established, and the aviation industry - in direct contradiction to the polluter pays principle - does not pay anything for these effects. Implementing a non-CO2 charge would correct this anomaly. It would also encourage the industry to suggest alternative, fairer (to individual airlines that cause less non-CO2 warming than others) ways of charging for these effects - which would in turn lead to changes in behaviour that would reduce non-CO2 emissions.

Charges like this have been used previously. The UK implemented the carbon price floor, which is an additional £18 charge that the UK power sector pays in addition to every ETS allowance surrendered. Arguably, it has been the UKs best climate policy of the last decade, since it is credited with driving coal power generation off the electricity system. It is not inconceivable that an additional non-CO2 charge applied to aviation could in future be seen as the main driver of zero emission plane uptake.

12) What could be done further or differently to ensure carbon markets and greenhouse gas removal methods are used most effectively?

It is clear that the aviation sector plans to be one of the industries that will still be emitting greenhouse gases in 2050. Therefore the onus should be on the industry to fund, research and develop greenhouse

gas removal methods. The implicit assumption throughout this consultation is that the government will lead on assessing, establishing, and funding the set up of a GGR industry, with the aviation industry subsequently benefiting from that. This is the wrong way round. Should aviation wish to emit carbon in 2050, it should fund the research, development and set up costs for the GGR industry it wishes to use to capture and sequester carbon - and the aviation industry should only be allowed to emit the same amount of carbon (or less) as it has developed and sequestered by that point. The Government's involvement should be to ensure that the market place operates effectively with robust sustainability criteria implemented.

For the avoidance of doubt though, GGRs should be a 'last resort', reserved for offsetting residual non-CO2 warming effects. Both industry's and government's focus should be on directly cutting emissions, and the requirement should be that the industry should be emitting zero carbon emissions by that point.

13) Do you agree or disagree with the overall focus on influencing consumers?
Yes, T&E agrees with the Government's overall focus, but thinks there should be a further requirement: that greenhouse gas emissions reporting should be mandatory for airlines, to a very granular level. T&E agrees that flight providers (e.g. Skyscanner and high street travel agents) should be required to show the estimated warming impacts of a given flight. We also recognise that changes in planes utilised on routes and changes in the weather will mean that estimated emissions and actual emissions will be different. Nevertheless, airlines should be required to estimate these emissions and provide the information to providers in advance.

Airlines already report their carbon emissions (due to CORSIA and ETS), and therefore already have experience of gathering the required data. Providing it in a standardised format to the UK government is therefore not particularly onerous for them. Required emissions reporting for airlines should include, but not be limited to:

- Annual CO2 emissions per airline
- Annual jet fuel burnt
- Annual SAF purchased in offtake agreements
- Type of SAF purchased in offtake agreements
- Type / age of aircraft used per flight
- Fuel (both amount and type) consumed per flight
- CO2 emissions per flight
- NOx emissions per flight
- Estimated other non-CO2 emissions and warming effects per flight

Importantly, all data should be made public, in as close to real-time reporting as possible. There is precedent for making the data public: the Netherlands already reports figures along these lines. T&E previously obtained some of this (2019) data, but had to do so via freedom-of-information requests.

14) What more can the Government do to support consumers to make informed, sustainable aviation travel choices?

No comment.

15) What could be done further or differently to ensure we tackle non-CO2 impacts from aviation?
It is now clear that non-CO2 emissions, and effects they cause have a substantial warming effect, and it is right that the government has included this section as part of the consultation. However, all the policies proposed implicitly suggest that the onus is on the government to form a fair system of dealing with non-CO2 effects, and in the meantime the industry should be allowed to carry on as before, with impunity

This is against both the polluter pays principle, and the precautionary principle. T&E therefore suggests that an explicit non-CO2 charge is quickly administered and applied to the industry. As described above, T&E suggests that an additional UK ETS charge, in a similar vein to the carbon price floor, is implemented. This charge should be fixed, and should be paid in addition to every ETS allowance that is surrendered. This scheme should then remain in place until such time as a 'better' scheme can be implemented. The onus would then be on the industry to design and agree on a scheme that means that airlines pay a proportionate amount to their total non-CO2 warming effects.

Further information

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