

## Gatwick Airport Northern Runway Project Appendix D: Response to Submissions on CC.2.1 (Finch)

## Book 10

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- 1.1.1 The Applicant addressed the implications of the <u>Finch</u> judgment in response to ExQ2 CC2.1 [<u>REP7-079</u>]. At Deadline 7 several parties made further submissions relating to the judgment. These are considered below.
- 1.1.2 The JLAs submit that <u>Finch</u> "is likely to indicate that CCD emissions for inbound flights ought to be assessed as part of the EIA process". It also appears to be suggested that inbound emissions could still be contextualised as the quantified well-to-tank ("WTT") emissions for aviation were in the **Supporting Greenhouse Gases Technical Notes** [REP4-020] although the JLAs do not explain how the approach taken there to assessing emissions arising from fuel production could be carried across to inbound aviation emissions (indeed no party has explained how inbound emissions should properly be contextualised).
- 1.1.3 CAGNE alleges [REP7-129] that the ES is deficient as it failed to assess the GHG emissions arising from the additional inbound flights which will be generated by the expansion project.
- 1.1.4 As the Applicant explained in [REP7-079], in the light of the Finch judgment it has assessed the GHG emissions arising from inbound flights (and provided the assessment in that document). It is convenient here to place that consideration of inbound flights in the context of the wider assessment work the Applicant has undertaken.
- 1.1.5 In **ES Chapter 16: Greenhouse Gases** [REP4-005] the approach taken to aviation emissions considered those relating to the taxi out and take off from outward flights from Gatwick, the CCD (climb, cruise, descent) aloft emissions for those flights, as well as the landing and taxi in emissions at the other airport. This method was undertaken to inform the assessment process in line with wider standards on carbon budget setting and international carbon reporting.
- 1.1.6 The UK's reporting of aviation emissions (against UK Carbon Budgets, and also internationally within the UK GHG Inventory) relies on accounting for sales of fuel from UK aviation fuel bunkers<sup>1</sup>. To assemble this account, it is necessary to estimate landing and take-off (LTO) emissions across domestic airports, and to estimate CCD emissions for each flight between domestic airports. Were all airports to count CCD emissions for flights both departing and arriving then the aggregate GHG emissions for each airport would over-report at a national scale.

<sup>&</sup>lt;sup>1</sup> Reporting on the basis of fuel sales is a requirement of UNFCCC, however doing this requires disaggregation between fuel sales for different purposes (civil domestic and international aviation, and military fuel use). Modelling of flight information from UK airports is used to support this disaggregation process, but ultimately fuel sales underpin formal reporting.



For the domestic aviation account CCD emissions are counted for an outward trip only.

- 1.1.7 For international reporting the LTO analysis at airport level considers only outbound flights (i.e. take-offs only). With regards to international flights the aim is again to ensure that reporting of aviation emissions aligns with the national reporting framework that is based on aviation bunker fuel sales. Outbound international flights draw fuel from UK aviation bunkers, but inbound flights do not. This is why emissions from inbound international flights are outside the scope of UK GHG reporting (both against UK carbon budgets, and against international GHG reporting requirements). On this basis the assessment considers only the outward emissions for international aviation.
- 1.1.8 The aggregation of domestic aviation emissions (from LTO emissions in respect of UK airports, and single-direction outbound CCR emissions between UK airports), and international aviation emissions (from LTO for international flights, and single-direction outbound emissions between UK and international airports) represent aviation emissions for the UK.<sup>2</sup> The aggregate equates to aviation bunker fuel use, and in doing so represents the UK's reporting under the UNFCCC requirements. It also represents 'Aviation emissions' within the UK GHG Inventory. This aggregate also forms the basis for the accounting of aviation emissions in the context of the UK's carbon budgets. This aggregate approach also represents the scope of emissions used by the CCC historically in their estimation of 'headroom' for international aviation emissions.
- 1.1.9 While it is not considered accurate to account for domestic inbound flights within the assessment (because the UK inventory methodology is based on accounting only once for each take-off and for each landing across the UK), the Applicant has considered these further, in response to the implication that the approach to WTT emissions in the **Supporting Greenhouse Gases Technical Notes** [REP4-020] required some further element of domestic emissions to be accounted for (albeit the suggestion is unclear), or to any more general point that domestic emissions fall under the scope of the UK carbon budgets.
- 1.1.10 However, domestic emissions are extremely small, and will reduce significantly over time as a result of the Jet Zero Strategy (just as outbound domestic aviation emissions do). The period 2029-2035 in fact shows a small decrease in domestic aviation emissions under the with-Project scenario (as seen in Tables 5.2.1 and

<sup>&</sup>lt;sup>2</sup> In the ES domestic LTO emissions are assessed by reference to flights taking off from Gatwick and landing at other airports, in order to maintain consistency of approach with the approach taken to international flights. There is no material distinction between this approach and one which, for reporting purposes, considers domestic LTO emissions based on flights taking off from Gatwick and also flights landing there after arriving from another airport.



5.3.1 in the **Assessment of Aviation Greenhouse Gas Emissions** [<u>APP-194</u>]) although this effect is very small, and largely reflects limitations in modelling for a period where domestic ATMs are varying by less than 1% between without-Project and with-Project.

- 1.1.11 After 2035 domestic aviation emissions for the Project (outbound only, as presented in the Assessment of Aviation Greenhouse Gas Emissions [APP-194]) are positive, but small. The Project increases outbound domestic aviation emissions by a maximum of 2.5% in 2050 (i.e. with-Project domestic aviation emissions are 2.5% higher than without-Project domestic aviation emissions). But by 2050 overall domestic aviation emissions are very small – as can be seen in Table 5.3.1 of the Assessment of Aviation Greenhouse Gas Emissions [APP-194] domestic aviation emissions total 0.031 MtCOe, compared to total aviation emissions of 3.476 MtCO2e (approximately 0.9%). This reflects that the period to 2050 will have seen rapidly decreasing domestic flight emissions in the UK in line with the Jet Zero commitment to net zero domestic flights by 2040). Were the with-Project domestic aviation emissions to be doubled (in order to include inbound domestic flights within the assessment) then the change in overall with-Project emissions would be very small, and would not materially affect the conclusions of the assessment.
- 1.1.12 On this basis the inclusion of domestic aviation within the assessment of GHG emissions against UK carbon budgets would not change the assessment of significance.
- 1.1.13 Turning to consideration of inbound international emissions, the Applicant has, in fact, provided an assessment of total inbound emissions. In REP7-079 it produced figures which were based on a simple doubling of the emissions associated with outbound flights. As at 2050, the calculation shows that the aviation emissions would double from 0.512 MtCO2e to 1.022 MtCO2e (excluding well-to-tank).<sup>3</sup> When WTT emissions for these flights are included (that is total WTT and not WTT arising from aviation fuel produced within the UK alone), this figure rises to 1.234 MtCO2e.
- 1.1.14 The issue which then arises however is how those figures can be contextualised. As the Applicant has explained (Section 12 of The Applicant's Response to Actions ISH6: Climate Change (including Greenhouse Gases) [REP 4-036] and The Applicant's Response to ExQ2 - Climate Change and Greenhouse Gases [REP7-079]), given how aviation emissions are calculated for the

<sup>&</sup>lt;sup>3</sup> This figure was drawn from a comparison between the total aviation figures shown in Tables 5.2.1 and 5.3.1 in ES Appendix 16.9.4: Assessment of Aviation Greenhouse Gas Emissions [APP-194] (3.476 MtCO2e with Project compared to 2.963 MtCO2e in the future baseline).



purposes of UK carbon budgeting, it is not considered possible to contextualise these doubled emissions properly against the UK carbon budget for the purposes of assessing significance.

- 1.1.15 Similarly, considering these doubled emissions against the JZ trajectory (see Diagram 16.9.3 of Chapter 16) would not allow for an appropriate contextualisation given that inbound international emissions are not within the scope of the JZ strategy and trajectory.
- 1.1.16 This presents challenges for contextualising and therefore for assessing the significance of the assessed inbound emissions. This is why the Applicant's response to ExQ2 CC.2.1 [REP7-079] sought to contextualise the total aviation emissions, including both inbound and inbound emissions, domestic and international, against an ICAO sector-based scenario that best aligns with the JZS High Ambition scenario, finding that at this level of contextualisation the project only emissions would account for 0.11% (no WTT) or 0.13% (with WTT) of projected global aviation emissions in 2050. These emissions are not regarded as significant adopting this approach to contextualisation.
- 1.1.17 Returning to the suggestion by the JLAs that inbound emissions could still be contextualised as the quantified WTT emissions for aviation were in the Supporting Greenhouse Gases Technical Notes [REP4-020], they do not explain how an assessment relating to fuel production could be carried across to inbound aviation emissions. It should be noted however that the approach taken in that WTT-related exercise was aligned with the UK Emissions Inventory which excludes emissions associated with imported goods. The Applicant has relied on the same Inventory to consider aviation emissions and their contextualisation against UK carbon budgets. However, further consideration has been given to domestic inbound emissions, as set out above. In so far as the suggestion may be intended to relate to WTT emissions for domestic inbound flights beyond those considered in the Supporting Greenhouse Gases Technical Notes [REP4-020], the Applicant again does not consider it accurate to account for these, but based on the figures in the **Supporting Greenhouse Gases Technical Notes** [REP4-020], the WTT emissions would be so small as to be lost in the rounding of the aviation emissions already assessed as presented in the ES, and have no impact upon the assessment conclusions reached within it.
- 1.1.18 Kent County Council [REP7-106] states that the assessment covers GHGs only as far as the landing stage of an outward flight but not consequential additional GHGs incurred by destination airports, in particular destinations which expand airport capacity to accommodate increased flight traffic arising from Gatwick



expansion. (It adds that "aviation emissions occur at any point in an aircraft's journey", which the Applicant takes to be a reference to inbound flights as addressed above).

- 1.1.19 However it is not possible to devise a list of the individual airports to which all projected flights will fly, (the future emissions profile is based on a broader split between domestic, short haul and long haul); and in any event it is not possible to determine whether or the extent to which GHGs at any individual airport have a causal relationship with flights arising from the Project. Further, it is not possible to meaningfully assess how additional passengers arriving at such an airport would either influence the wider operation of that airport or make choices of activity that affect emissions in a way that can reasonably be assessed. The Applicant does not consider that it would be possible to gather reliable evidence which moved beyond conjecture, or therefore contribute to a properly reasoned conclusion on the GHG emissions arising from the Project (see Finch at [74], [77]).
- 1.1.20 Nutfield Conservation Society ("the Society") argue that the Project the expansion of passenger numbers at Gatwick will result in a proportionate increase of Scope 3 Greenhouse Gas emissions at waste incinerators at Newhaven and Basingstoke (Chineham). They have used data provided by the Applicant in the **Operational Waste Management Strategy** [REP3-070].
- 1.1.21 To address this submission, it is convenient first to consider how the ES estimates of emissions arising from waste management. The methodology for doing so sought to understand the scale of emissions from waste management under existing operations, and then to estimate likely emissions arising from the Project.
- 1.1.22 In summary the methodology was as follows:
- 1.1.23 Baseline emissions for 2018 were taken as 294 tCO<sub>2</sub>e (Assessment of Greenhouse Gas Emissions for Airport Buildings and Ground Operations [APP-192] Table 5.1.1). This reflected recorded waste arisings of 13,722 tonnes;
- 1.1.24 The calculated baseline emissions used corporate reporting data for the Applicant that identified different portions sent for recycling, re-use, recovery and landfill. The estimated GHG emissions were calculated using GHG factors per tonne of:
  - 21.3842 kgCO<sub>2</sub>/tonne of waste sent for recycling, re-use, and recovery;
  - 99.7729 kgCO<sub>2</sub>e/tonne of waste sent to landfill.



- 1.1.25 These carbon factors were taken from the 2018 Greenhouse Gas reporting conversion factors produced by UK Government reflecting Commercial and Industrial waste.
- 1.1.26 Future emissions arising from waste management were then estimated based on scaling by passenger numbers for future years (see ES Chapter 16: Greenhouse Gases [APP-041] Table 16.4.3].
- 1.1.27 The emissions arising from waste management represent a relatively small portion of calculated emissions increasing to 536 tCO<sub>2</sub>e for the airport with the Project in place, an increase of <u>93 tCO<sub>2</sub>e</u> over the future baseline scenario in 2050. This estimate does not take into account any measures undertaken by the Applicant to reduce waste emissions in operations and so is conservative in its assumptions.
- 1.1.28 Whilst not calculated in terms of waste arisings (as emissions were estimated by scaling the baseline value by passenger numbers) the increase of 93 tCO<sub>2</sub>e in 2050 would (assuming GHG emissions factors remain constant) equate to an increased mass of waste arising from the project of approximately 4,340 tonnes (calculated by calculating 93 tCO2e ÷ 294 tCO2e \* 13,722 tonnes = 4,340 tonnes of waste).
- 1.1.29 The Society argue that emissions from incineration at Newhaven and Basingstoke will result in higher GHG emissions than those reported in the ES. It presents its own analysis based on estimates of waste arisings taken from the Applicant's **Operational Waste Management Strategy** [REP3-070]. The analysis provided finds that an estimated 3,043.90 tonnes will be sent to incineration in 2047. By reference to emissions reporting from the Newhaven incinerator, it estimates as a result that the difference in emissions (in 2047) would be (9,736 – 6,960) = 2,776 tCO<sub>2</sub>e. This compares to a value of <u>93 tCO<sub>2</sub>e</u> presented in the ES.
- 1.1.30 The reason for the difference arises from the reporting methodologies used in each case. For the ES the modelling approach adopted UK Government corporate reporting emissions factors. These represent a standard set of factors used for corporate reporting under a range of organisational and statutory reporting mechanisms. Waste represents a special category within the reporting as an organisational by-product that requires treatment and management. The treatment of waste incineration within UK Government Corporate Reporting carbon factors does not represent direct emissions (i.e. GHG emitted from



incinerator chimneys), but as noted in the 2018 methodology paper for the conversion factors<sup>4</sup> these figures are based on collection and delivery of wastes.

- 1.1.31 The Society submission presents the absolute emissions likely to arise from increased waste generation and incineration. This does not follow the reporting methodology described above, however the Applicant accepts the utility of considering the implications of adopting the Society approach. For the purposes of this sensitivity assessment the values estimated by Nutfield are taken to be representative.
- 1.1.32 Emissions in 2047 arising from the Project are estimated as 2.8 ktCO<sub>2</sub>e on the basis that volumes of waste sent for incineration reflect those set out in the Operational Waste Management Strategy, and GHG emissions per unit of waste reflect those presented by the Society.
- 1.1.33 If this is taken as a representative quantity for each of the assessment periods, then comparing this to Table 16.9.13 in **ES Chapter 16: Greenhouse Gases** [APP-041], the additional 2.8 ktCO<sub>2</sub>e per year represents an increase of around 3% in the total net additional GHG emissions arising from the Project in the Fourth carbon budget period (increasing from 0.475 MtCO<sub>2</sub>e to 0.489 MtCO2e). The contribution to the Carbon Budget including waste incineration would increase from 0.024% to 0.025%).
- 1.1.34 The additional 2.8 ktCO<sub>2</sub>e per year represents an increase of around 2.4% in the total net additional GHG emissions arising from the Project in the Fifth carbon budget period (increasing from 0.577 MtCO<sub>2</sub>e to 0.591 MtCO<sub>2</sub>e). The contribution to the Carbon Budget including waste incineration would increase from 0.033% to 0.034%).
- 1.1.35 The additional 2.8 ktCO<sub>2</sub>e per year represents an increase of around 0.25% in the total net additional GHG emissions arising from the Project in **Sixth** carbon budget period (this figure proportionately smaller because 'in scope' emissions are larger in the Sixth Carbon Budget period as they include international aviation). This increases the contribution of the Project to the Sixth Carbon Budget from 0.604% to 0.605%.
- 1.1.36 On this basis, when the assessment of GHG emissions takes account of full emissions arising from treatment, not just those attributable in line with an established corporate accounting approach, the scale of said emissions is so small as to leave the conclusions of the assessment unaffected.

<sup>&</sup>lt;sup>4</sup> <u>https://assets.publishing.service.gov.uk/media/5b4f4703ed915d4397535e4e/2018\_methodology\_paper\_FINAL\_v01-00.pdf</u>



- 1.1.37 The Society also appear to suggest that emissions relating to Sustainable Aviation Fuels should be considered, on the grounds that without the expansion of activity under the Project emissions arising from their manufacture and use would be proportionately reduced. It draws attention to previously submitted documents referring to Net Zero Aviation Fuels and Reality of Waste Derived Fuels [REP1-248] and [REP1-249], stating that the safe management and disposal of by-products and residues resulting from fuel manufacture may themselves give rise to greenhouse gas emissions which "may arguably" fall for consideration.
- 1.1.38 The assessment in **ES Chapter 16: Greenhouse Gases** [APP-041] took into account emissions relating to the comparable life cycles of SAF compared with normal jet fuel, which were consistent with assumptions adopted by government for the purpose of preparing the JZS. The JZS analytical annex<sup>5</sup> states that these reflect the life cycle emission savings relative to kerosene as set out in the 'Mandating the use of sustainable aviation fuels<sup>6</sup>' consultation. The assessment presented within **ES Chapter 16: Greenhouse Gases** [APP-041] considers it reasonable to assume that the UK Government's consultation assumptions take appropriate account of the full Life Cycle Impacts of SAF production.
- 1.1.39 The Society concedes in any event that "because manufacture of SAF at commercial scale is still experimental and unproven, with little published data on emissions arising from their manufacture, it is impossible to estimate whether Scope 3 emissions may need to be taken into consideration". This on its own suggests that it would not be possible to go further in gathering reliable evidence which enabled a more thorough investigation of likely SAF impacts that has been assumed by UK Government.
- 1.1.40 Christopher Harwood refers simply to "Scope 3 emissions" in the light of the <u>Finch</u> judgment, but makes no claim relating to emissions that have not been appropriately covered in **ES Chapter 16: Greenhouse Gases** [APP-041]. Mole Valley and Epsom and Ewell Green Party [REP7-144] also refer simply to Scope 3 emissions and those arising from the growing of crops to produce SAF, which are addressed above. Charlwood Parish Council also refer to "Scope 3 emissions", noting that these are the result of activities from assets not owned or controlled by the airport, but that the airport indirectly affects in its value chain. It gives examples including the burning of fuel by airlines hosted by the airport, transporting waste from the airport to disposal sites, fuel burned for ground transportation of passengers and crew, the emissions footprint of in-flight food,

<sup>&</sup>lt;sup>5</sup> <u>https://assets.publishing.service.gov.uk/media/62f21404d3bf7f75b61f8c22/jet-zero-strategy-analytical-annex.pdf</u>

<sup>&</sup>lt;sup>6</sup> https://www.gov.uk/government/consultations/mandating-the-use-of-sustainable-aviation-fuels-in-the-uk



and of single-use consumables (e.g. plastics) used. (It also refers the "further complexity" of SAF, in terms similar to the Society – this is addressed above).

- 1.1.41 Burning of fuel by airlines hosted by the airport is included within the assessment of Aviation emissions set out in **ES Chapter 16: Greenhouse Gases** [APP-041] and in the Assessment of Aviation Greenhouse Gas Emissions [APP-194]. Waste transport was included within the assessment of emissions from operational waste management as set out above and in the Assessment of **Greenhouse Gas Emissions for Airport Buildings and Ground Operations** [APP-192]. Fuel burnt for ground transportation is also included within the assessment, in the assessment of Surface Access within ES Chapter 16: Greenhouse Gases [APP-041] relating to staff and passenger access and in the Assessment of Surface Access Greenhouse Gas Emissions [APP-193], and in the Assessment of Greenhouse Gas Emissions for Airport Buildings and Ground Operations [APP-192] for fuel use by operators within the airport. As for in-flight food and single-use consumables, the Applicant is not convinced that any sufficient causal connection could be established between the consent for the Project and the emissions generated to create products such as bags of crisps or plastic forks that are consumed or used on the flights that are served by the Project; and in any event any assessment of the emissions that would arise from the activities which create these products would be speculative when any attempt is made to correlate them to the activities of passengers on flights associated with the Project. Notwithstanding this position, it is difficult to reach any conclusion other than a judgment that such emissions, even if they could be regarded as having a causal relationship with the Project, would be anything other than miniscule and insignificant in the context of the aviation emissions generated by the flights on which these consumables are used.
- 1.1.42 **ES Chapter 16: Greenhouse Gases** [<u>APP-041]</u> considers the concept of Scope 3 emissions more generally, noting that in the case of proposals such as the Project, reporting of emissions against the scopes in the GHG Protocol is complex and of limited value in circumstances where the assessment incorporates emissions from multiple entities and would be categorised differently depending on the relevant entity. Thus, the use of aviation fuel for a flight is a Scope 1 emission for the operating airline, but the fuel consumption used during take-off and landing phases would be classed as a Scope 3 emission for the Applicant. For this reason, limited reference is made to which emissions fall under Scopes 1/2/3. However, **ES Chapter 16: Greenhouse Gases** [<u>APP-041</u>] considers a range of Scope 3 emissions which are considered to represent a reasonable basis upon which to assess the GHG effects of the Project.



- 1.1.43 GACC [REP 7-132] refer to the Project generating more surface access journeys to and from the airport, both resulting from the increase in flights facilitated by the runway expansion and "the increased ease to make these increased journeys by road, due to the choice to invest in expanding highway infrastructure capacity". Surface access-related emissions are considered as part of the assessment. The impacts arising from passenger and staff journeys to and from the airport are included in the quantification of surface access emissions.
- 1.1.44 Jackie Macey [REP7-135] refers to Scope 3 emissions but in particular to "the increased emissions resulting from increased flights into and out of Gatwick following expansion" and "the emissions from travel to and from the airport which is in excess of current journeys". The emissions resulting from increased flights have been assessed within the aviation emissions; and emissions from travel to and from the airport are included in the surface access emissions.
- 1.1.45 Plane Wrong [REP7-148] suggest that the Applicant can "no longer refuse to take account of the total additional emissions caused by each aircraft utilizing the additional slots that may be provided by the DCO". This does not suggest that any emissions beyond those already considered as part of the aviation emissions fall for consideration.
- 1.1.46 Jacqueline Phillips [REP7-136] refers to several aspects of the Finch judgment to raise different questions relating to the ES assessment:
- 1.1.47 Have the local population been properly consulted and made aware of the impact of aviation pollution on their health? Have the wider public been properly informed of the impact of airport expansion on global heating and on their health? the ES and the wider DCO application has been fully consulted upon as explained in the Consultation Report [APP-218] and health impacts have been assessed in ES Chapter 18: Health and Wellbeing [APP-043];
- 1.1.48 Has the current EIA given a sufficient account of both the carbon emissions and the non-CO2 emissions that are known to have a similar, or larger, effect on climate of the flights resulting from increased runway usage? the Applicant considers that its assessment gives a proper account of the carbon emissions arising from the Project. It has explained (Chapter 16 paras 16.4.12-14) that although the likelihood of non-CO2 emissions contributing to changes in climate is acknowledged, given that there remains no well-established methodology for quantifying non-CO2 emissions impacts, and there is uncertainty on how to identify the magnitude of their impact, the assessment does not attempt to quantify non-GHG and RF effects of emissions at altitude.



- 1.1.49 Does the EIA need updating with current knowledge on fine particulate air pollution? ES Chapter 13 Air Quality [<u>APP-038</u>] addresses all relevant sources of air pollution including fine particulates.
- 1.1.50 The same representation refers to paragraph 108 of the Finch judgment: "An assumption made for planning purposes that non-planning regimes will operate effectively to avoid or mitigate significant environmental effects does not remove the obligation to identify and assess in the EIA the effects which the planning authority is assuming will be avoided or mitigated."
- 1.1.51 This aspect of the judgment was directed at the proposition that the assessment of ES emissions in that case could confine itself only to direct GHG emissions from sources within the well site boundary, and not cover downstream emissions generated when the oil produced from the wells was processed and used because those processes were regulated by other, non-planning regimes. The judgment found that this was not a legitimate basis on which to limit the scope of an ES. Thus, an assumption made for planning purposes that non-planning regimes will operate effectively did not remove the discrete obligation to assess the relevant effects in the ES.
- 1.1.52 The ES in this case does not purport to avoid the assessment of emissions resulting from the Project on this basis. It has addressed what the Applicant considers to be the indirect GHG emissions arising from the Project.