SSE Briefing Note on Planning Application UTT/18/0460/FUL

Material Considerations: Fleet Composition Assumptions

1. Amongst the most controversial issues considered at the meeting of the UDC Planning Committee on 14 November 2018 were the fleet composition assumptions made by STAL. In short, STAL had assumed that the majority of the current Stansted fleet of aircraft would be replaced by much 'cleaner and quieter' aircraft by 2028 (actually, by the end of 2027).

2. It was pointed out by SSE at that time that STAL's fleet composition assumptions for aircraft movements, as summarised in the table below, were wholly implausible and were not supported by the evidence. These assumptions provide the starting point for the projections provided in STAL's February 2018 Environmental Statement for Planning Application UTT/18/0460/FUL in respect of aircraft noise, air quality and carbon emissions.

Fleet assumptions for aircraft movements used by STAL for modelling

Modelling Category	*Aircraft Type*	*Base Year 2016*	*Base Case 35mppa 2028*	*Development Case 43mppa 2028*
1	BAE ATP/DH4	13,869	15,193	7,736
2	B738	128,211	81,461	94,200
	B737 MAX8	0	98,779	117,724
3	A319	25,143	10,185	12,107
	A320neo	145	20,561	23,673
4	B757	943	1,011	381
6	B777F	5,538	11,694	12,208
7	MD11F	1,102	1,178	1,163
8	B747-8F	2,071	4,787	4,473
9	Embraer 190	1,452	1,670	293
10	EC155 Helicopter	2,145	2,301	7
Total		**180,619**	**248,820**	**273,965**

Source ES 2, Appendix 2, Table 10.2.2. Note: Category 5 not used.

3. The implausibility of the above assumptions can be demonstrated by looking at the example of Ryanair, which accounts for four out of every five Stansted passengers. As at 30th June 2019, Ryanair had a fleet of 455 aircraft[1], all of which are Boeing 737-800s (identified by the ICAO aircraft type nomenclature B738 in the table above). The average age of the Ryanair fleet is just over seven years.

4. Ryanair intends to gradually replace its current fleet of Boeing 737-800s with the new 'cleaner and quieter' Boeing 737 MAX8 aircraft. In 2014 Ryanair placed orders for 135 Boeing 737 MAX8 aircraft for delivery by 2024 with options for a further 75 Boeing 737 MAX8 aircraft with later delivery dates. These aircraft were originally due to commence delivery in April 2019.

[1] Excluding its Austrian subsidiary, Lauda, which operates 22 (leased) Airbus A320-200 aircraft.

5. The Department for Transport ('DfT') advises that the average service lifespan for UK civil passenger aircraft on scheduled operations is 22 years. On a 22-year life cycle, only about 50 of Ryanair's current fleet would be replaced by 2028, by which time Ryanair would have around 615 aircraft, a third of which would be the new 'cleaner and quieter' Boeing 737 MAX8. However, it can be seen from the above table that STAL has assumed that 56% of the B737s operating at Stansted in 2028 will be the 'cleaner and quieter' MAX8 variant. This assumption was wholly implausible 12 months ago and is even more implausible today in view of the issues arising with the Boeing 737 MAX8 over the past year

The Boeing 737 MAX

6. The Boeing 737 MAX came into service in 2017 and is the largest selling aircraft in the history of commercial aviation. As at March 2019, Boeing had orders for over 5,000 737 MAX aircraft and only some 400 aircraft had been delivered. The order lead time was around seven years.
7. Following fatal crashes of two Boeing 737 MAX 8 aircraft – the first on 29th October 2018 and then another on 10th March 2019 – resulting in 349 deaths, regulatory authorities around the world grounded the 737 MAX series until further notice. Deliveries were immediately stopped and production stopped shortly afterwards. There continues to be some uncertainty as to when the design/safety problems can be resolved and the aircraft allowed to return to service.
8. It is however clear the assumed level of replacement of existing aircraft types in the Stansted fleet with new 'cleaner and quieter' aircraft types will fall far short of the 56% that STAL has assumed for 2028. The 56% assumption was always highly implausible. A more realistic assumption based on the latest facts would be a replacement level of about 25%-30% by 2028.
9. The assumed level of fleet replacement is fundamentally important because it is the starting point for assessing the air quality, noise and carbon impacts of the proposed development, and because the Boeing 737 MAX8 has been modelled by STAL to be so much 'cleaner and quieter' than the current Boeing 737-800 model used by Ryanair and others.

Implications for Local Air Quality and Noise Impacts

10. The assumptions used by STAL (and/or its consultants) in modelling the air quality impacts of the proposed development are that the CFM LEAP-1B engines which will power the new B737-MAX8 will have an emissions factor (for take-off and climb)[2] of 12.2. This is 40% lower than the comparable emissions factor of 20.5 assumed for the aircraft they will replace (B737-800s powered by CFM56-7B engines).
11. A range of other assumptions have been made by STAL which we have been unable to validate. However, assuming that emissions of nitrogen oxides (NOx) reduce in line with the overall reduction in aircraft emissions, the new aircraft engines will, on average, deliver a 23% reduction in NOx emissions based on MAG's fleet replacement assumption of 56% new aircraft types accounting for all flights in 2028. If the actual level of fleet replacement is 25%-30% (in line with the available evidence) the average reduction in NOx emissions per aircraft will be 10%-12% rather than the 23% assumed by STAL.

[2] It is the 'take-off and climb' emissions factor which affects local air quality. The emissions reductions at lower levels of thrust (i.e. taxiing, hold, and landing) are far less significant, generating very low emissions compared to take-off and climb.

12. Similarly, the noise footprint for the B737 MAX8 is assumed to be about 50% smaller on departure and 30% smaller on arrival compared to the B737-800s they will replace. If the level of fleet replacement by 2028 is 25%-30%, rather than the 56% assumed by STAL, the noise impacts will be very substantially higher than has been modelled because the reduction in the average noise footprint per aircraft will be 10-12% rather than the 23% assumed by STAL.

13. Even before the issues with the B737 MAX emerged it was clear that the modelling assumptions used by STAL to assess the adverse noise and air quality impacts for the 2028 Development Case were bound to result in a significant understatement of these impacts. In view of the gravity of the issues with the B737 MAX over the past year and the difficulties and uncertainties which still lie ahead, it is now clear beyond doubt that the noise and air quality projections submitted by STAL in its February 2018 Environmental Statement are even further understated and cannot be relied upon.

Materiality

14. It is for the Planning Committee to judge whether the issues that have emerged with the Boeing 737 MAX amount to a *material new consideration*. Plainly, a *new* consideration has arisen because the design/safety issues with this aircraft were not apparent in November 2018, when the Planning Application was provisionally approved[3]. There is obviously also the potential for this to be a *material* consideration because STAL has assumed that the Boeing 737 MAX will account for more aircraft movements at Stansted in the 2028 Development Case than any other aircraft type.

15. In order to assess the materiality of this new consideration, STAL needs to re-run its noise and air quality/emissions models, taking account of the latest available information regarding the likely timing of current aircraft types being replaced by new aircraft types over the next eight years. This should be neither an onerous nor a lengthy task for STAL. It is, however, a very necessary task in order to ensure to ensure that STAL's current projections for noise, air quality and carbon impacts (as set out in Volume 1, Chapters 7,8,10 and 12 of the Environmental Statement), are updated to reflect current realities.

16. SSE presented detailed evidence to the Planning Committee in 2018 showing that STAL's modelling assumptions for noise, air quality and carbon impacts were unreliable. That was even before there was any known issue with the Boeing 737 MAX. It goes without saying that the updated modelling work will provide a far less favourable set of projections than before for the noise, air quality and carbon impacts of the 43mppa Planning Application upon the local community.

17. However, having regard to the potential health consequences for the local community – arising both from increased air pollution and increased aircraft noise impacts – we submit that the Planning Committee has a duty to ensure that STAL has provided a reliable assessment of the noise and air quality impacts of the proposed development.

18. The Government's clearly stated policy[4] for planning applications being considered at local level is that the local planning authority should take particular account of the *"elements which impact local individuals such as noise and air quality"* and should ensure that *"local stakeholders are given appropriate opportunity to input into potential changes which affect*

[3] The first fatal accident occurred on 29th October 2018 but it was only after the occurrence of the second fatal accident on 10th March 2019 that the underlying safety/design problem with the B737 MAX became apparent.
[4] 'Beyond the Horizon: making best use of existing runways', DfT, June 2018, paras 1.9 -1.10.

their local environment and have their say on airport applications", as follows:

> *"Role of local planning*
>
> *...*
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> *For the majority of environmental concerns, the government expects these to be taken into account as part of existing local planning application processes. It is right that decisions on the elements which impact local individuals such as noise and air quality should be considered through the appropriate planning process and CAA airspace change process.*
>
> *Further, local authorities have a duty to consult before granting any permission, approval, or consent. This ensures that local stakeholders are given appropriate opportunity to input into potential changes which affect their local environment and have their say on airport applications."*

19. We do not expect the Planning Committee to conclude – solely on the basis of evidence provided by SSE – that the problems with the Boeing 737 MAX amount to a material new consideration. There is, however, no doubt that the adverse noise and air quality impacts of the proposed expansion of Stansted Airport to 274,000 flights per annum and a throughput of 43mppa are of fundamental importance to the local community. There is also no doubt that the modelling projections provided by STAL in February 2018 are no longer valid and must be updated. Only when that work has been completed will the Planning Committee be in a position to make an objective assessment of the materiality of the Boeing 737 MAX issue.

Stop Stansted Expansion
30 October 2019