HEALTH COSTS ASSESSMENT

Noise Annoyance:

Total number of HA in 2023 at Dublin Airport amounted to **71,388** people as per https://www.fingal.ie/sites/default/files/2024-08/noise-mitigation-effectiveness-review-report-for-2023.pdf.

Convert to DALYs by multiplying by the disability weight of **0.02** (WHO 2018):

71,388 x 0.02 = **1,428 DALYs**

Convert to euros using the value of a healthy life-year, equal to €132,000:

1,428 x 132,000 = **€188,496,000**

Sleep Disturbance:

Total number of HSD in 2023 at Dublin Airport amounted to **32,562** people as per https://www.fingal.ie/sites/default/files/2024-08/noise-mitigation-effectiveness-review-report-for-2023.pdf.

Convert to DALYs by multiplying by the disability weight of **0.07** (WHO 2018):

32,562 x 0.07 = **2,279 DALYs**

Convert to euros using the value of a healthy life-year, equal to €132,000:

2,279 x 132,000 = **€300,828,000**

Therefore, the health-economic cost due to HA and HSD amounted to **€489,324,000** in 2023 alone.

1.2 Burden of Disease / Disability Adjusted Life Years (DALY)

In 2016 the EU carried out a review and evaluation of the Environmental Noise Directive (END) titled "*Evaluation of Directive 2002/49/EC Relating to the Assessment and Management of Environmental Noise*" (https://op.europa.eu/en/publication-detail/-/publication/7febde6d-9a89-11e6-9bca-01aa75ed71a1). In section 1.3.2 of the review it references the WHO 2011 publication on the '*Burden of Disease from environmental noise through the quantification of healthy life years lost in Europe*' (http://www.euro.who.int/__data/assets/pdf_file/0008/136466/e94888.pdf). According to the WHO, a Disability-Adjusted Life Years (DALY) represents one lost year of "*healthy*" life.

> *"The sum of these DALYs across the population, or the burden of disease, can be thought of as a measurement of the gap between current health status and an ideal health situation where the entire population lives to an advanced age, free of disease and disability"*

In a Defra 2014 report titled '*Environmental Noise: Valuing impacts on: sleep disturbance, annoyance, hypertension, productivity and quiet*' (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/380852/environmental-noise-valuing-imapcts-PB14227.pdf), it recommends the use of disability-adjusted life years (DALYs) to reflect the value of impact':

DALY = Years of life lost (YLL) + Years lived with Disability (YLD)

This analysis focuses solely on years lived with disability (YLD). In the DEFRA 2014 report it assumes that sleep disturbance does not result in premature death and therefore YLL is zero. However, recent scientific evidence suggests that sleep disturbance can cause premature death. For simplicity in this analysis, YLL is assumed zero although this should be investigated further by ANCA.

For Sleep Disturbance, the value is defined by the following formula:

Valuing sleep disturbance

32. The value of sleep disturbance can be calculated. A full description of the method is provided in Annex II. The overall approach to valuing sleep disturbance is provided in the following equation:

> Value of sleep disturbance = population exposed x proportion sleep disturbed x disability weight x health value

This equates to: **Total HSD x 0.07 x Value of DALY**

The Highly Sleep Disturbed (HSD) population can be calculated using the formulae in Annex III of 2002/49/EC (END) which were inserted by EU Directive 2020/367 (https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32020L0367).

$$AR_{HSD,air} = {\left(16.7885 - 0.9293 * L_{night} + 0.0198 * {L_{night}}^{2}\right)}/{100} \text{ (Formula 9)}$$

for aircraft noise.

3.3. **For HA and HSD in the case of road, railway and aircraft noise, the total number N of people affected by the harmful effect *y*** (number of attributable cases) due to the source *x*, for each combination of noise source *x* (road, railway or aircraft source) and harmful effect *y* (HA, HSD), is then:

$N_{x,y} = \sum_j [n_j * AR_{j,x,y}]$ (Formula 12)

Where:

— $AR_{x,y}$ is the AR of the relevant harmful effect (HA, HSD), and is calculated using the formulas set out in point 2 of this Annex, calculated at the central value of each noise band (e.g.: depending on availability of data, at 50,5 dB for the noise band defined between 50-51 dB, or 52 dB for the noise band 50-54 dB),

— n_j is the number of people that is exposed to the *j*-th exposure band.

The disability weight for Sleep Disturbance has been assigned by the WHO in their 2018 Guidelines as **0.07**. This means that being highly sleep disturbed due to environmental noise reduces a completely healthy individual's health by around 7%.

For Sleep Annoyance, the value is defined by the following formula:

> Value of annoyance = population exposed x proportion highly annoyed x disability weight x heath value

This equates to: **Total HA x 0.02 x Value of DALY**

From Annex III of 2002/49/EC (END):

$$AR_{HA,air} = \left(-50.9693 + 1.0168 * L_{den} + 0.0072 * L_{den}^{2}\right)/100 \qquad \text{(Formula 6)}$$

for aircraft noise.

3.3. **For HA and HSD in the case of road, railway and aircraft noise, the total number N of people affected by the harmful effect y** (number of attributable cases) due to the source x, for each combination of noise source x (road, railway or aircraft source) and harmful effect (HA, HSD), is then:

$$N_{x,y} = \sum_j [n_j * AR_{j,x,y}] \text{ (Formula 12)}$$

Where:

— $AR_{x,y}$ is the AR of the relevant harmful effect (HA,HSD), and is calculated using the formulas set out in point 2 of this Annex, calculated at the central value of each noise band (e.g.: depending on availability of data, at 50,5 dB for the noise band defined between 50-51 dB, or 52 dB for the noise band 50-54 dB),

— n_j is the number of people that is exposed to the j-th exposure band.

The disability weight for Sleep Annoyance has been assigned by the WHO in their 2018 Guidelines as **0.02**. This means that being highly annoyed due to environmental noise reduces a completely healthy individual's health by around 2%.

1.3 HA / HSD

The total number of Highly Sleep Disturbed (HSD) and Highly Annoyed (HA) people for various scenarios have been calculated by the daa using Annex III of 2002/49/EC (END) and are presented in tables 13-16 and 13-38 in the EIAR Supplement:

Table 13-16: Number of people highly sleep disturbed – 2018

Scenario	No. People Highly Sleep Disturbed	
	Excluding Consented Developments	Including Consented Developments
2018	42,260	48,950

Table 13-38: Number of people highly sleep disturbed – 2025

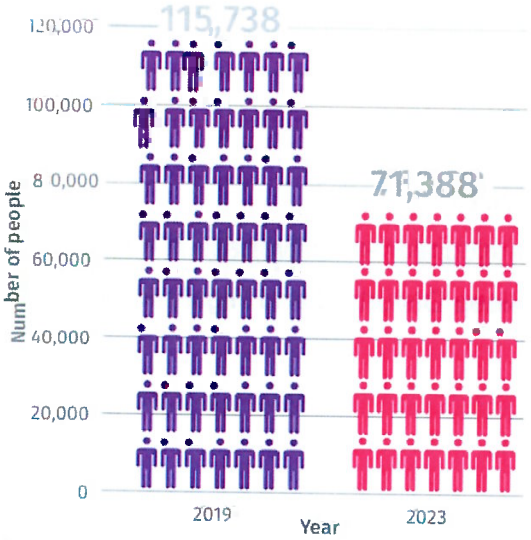
Scenario	No. People Highly Sleep Disturbed	
	Excluding Consented Developments	Including Consented Developments
2025 Proposed	23,884	29,589
2025 Permitted	22,281	27,474

In ANCA's Noise Mitigation Effectiveness Report for 2023, https://www.fingal.ie/sites/default/files/2024-08/noise-mitigation-effectiveness-review-report-for-2023.pdf, it reports on the number of people Highly Sleep Disturbed and Highly Annoyed in 2023:

HEALTH COSTS ASSESSMENT

Compared to the situation in 2019, the number of people categorised as highly sleep disturbed was significantly lower during 2023 - a reduction of 31%. This indicator remains on target for a reduction of 30% by 2030. The contour maps on the eANCA website can be examined down to the level of individual properties for all mapped noise bands.

Figure 12 - Number of people highly sleep disturbed by year



Compared to the situation in 2019, the number of people categorised as highly annoyed was significantly lower during 2023 - a reduction of 38.3%.

Figure 7 - Number of people highly annoyed by year

It is very clear that the predicted 2025 Proposed figures published by the daa in their EIAR Supplementary Report for 2025 are an underestimation of the true Highly Annoyed and Highly

HEALTH COSTS ASSESSMENT

Sleep Disturbed figures for 2025. Comparing the predicted HA/HSD figures from the EIAR Supplementary Report and the real HA/HSD figures from ANCA's Noise Mitigation Effectiveness Reports for 2022/2023:

Year	HA	HSD
2022	47355	21338
2023	71388	32562
2025 Permitted	55041	22281
2025 Proposed	53854	23884

Passenger numbers have increased in 2024 compared to 2023 and it's safe to assume that the HA and HSD figures will increase even further in 2024.

1.4 Cost of a DALY

In a recent publication from the Belgian Superior Health Council which was requested by the Federal Minister of Social Affairs and Public Health concerning the issues of noise in the vicinity of Brussels Airport, a value of **€132,000** was used (reevaluated for the year 2020) as derived from the work of the Quinet Commission (Commissariat général à la stratégie et à la prospective. (2013). Evaluation socioéconomique des investissements publics).

https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth_theme_file/20240506_hgr-9741_vliegtuiglawaai_en_andere_emissies_vweb.pdf

For this review in Belgium, a short study commissioned by "Bond Beter Leefmilieu" was conducted in 2023 by a French consulting bureau, ENVISA, to assess the health economic impact of aircraft noise on those living in the vicinity of Brussels airport.

https://wakeupkraainem.be/wp-content/uploads/2023/06/ENVISA_Health-Economic-Impact-Brussels-Airport_March-2023.pdf

The authors used the same methodology as that used for a study conducted in 2021 by Bruitparif in Île de France (Social cost of aircraft noise in Île de France), and their results are in line with those of the latter. This is the same methodology as presented above.

	Bruit-Parif - Ile-de-France			**Envisa - Brussels**		
	People	DALYs	Cost €bn/yr	People	DALYs	Cost €bn/yr
HA	210,000	4,200	0.553	220,000	4,380	0.578
HSD	188,000	13,000	1.738	109,000	7,630	1.007
CVD	78,000	9,300	1.222	53,000	6,800	0.9

HEALTH COSTS ASSESSMENT

Using the HA and HSD figures from the daa's and ANCA's reports and applying the same methodology as used in Belgium and France to Dublin Airport, the number of DALYs and associated costs are as follows:

	Dublin Airport 2023			Dublin Airport 2025 Proposed		
	People	DALYs	Cost €bn/yr	People	DALYs	Cost €bn/yr
HA	71,388	1,428	0.188	53854	1,077	0.142
HSD	32,562	2,279	0.301	23884	1,672	0.221
CVD (*)			0.300			0.225
Total			**0.789**			**0.598**

(*) Please note that the CVD figures for Dublin Airport include an estimated cost attributed to cardiovascular disease (CVD). For Ile-de-France these amounted to €1,222 million and €900 million for Brussels. Dublin Airport's 2023 real HA and HSD figures are roughly one third those of Brussels and therefore it can be assumed that there would be a further €300 million annual cost associated with CVD at Dublin Airport.

In 2023, the estimated health cost of just annoyance and sleep disturbance due to aircraft noise was estimated to be **€489 million**. For the 2025 Proposed scenario, it is estimated to cost **€363 million**.

These health care costs were never addressed by ANCA, and the Inspector has also failed to consider their impact. The Board needs to be made aware of these costs to ensure a balanced assessment as per the Balanced Approach.

Adding the €300 million CVD cost to the €489 million HA and HSD costs for 2023, the total annual amount of health care costs attributed to Dublin Airport for the year 2023 amounts to **€789 million**, over a quarter of a billion euros.

These staggering health care costs cannot be ignored by the Board and the only way to reduce these costs is to have a complete ban on nighttime flights or a very restrictive movement limit as suggested by the Inspector.

HEALTH COSTS ASSESSMENT

EU598/2014 Annex I Istates that Competent Authorities may take account of health and safety of local residents and environmental sustainability:

ANNEX II

Assessment of the cost -effectiveness of noise-related operating restrictions

The cost-effectiveness of envisaged noise -related operating restrictions will be assessed taking due account of the following elements, to the extent pos sible, in quantifiable terms:

(1) th e anticipated no isebenefit of the env saged measures, now and in the future ;

(2) the safety of aviation operations, including third-party risks;

(3) tle capacity of the a rport;

(4) any effects on the European aviation network.

In addition, competent authorities may take due account of the foll owing fac tors:

(1) the health and safety of local residents living in the vicinity of the ai port.

(2) envir onmental su stainabil ity including interdependencies be tween noise and emis sions;

(3) any direct, indirect or cataly tic employment and economic effects.

It also lists '*environmental sustainability, including interdependence between noise and emissions*'. The daa have provided no costings on environ mental sustainabil ity or inte rdependencies between noise and emissions. ANCA, as regulator, should insist on these costings to qu antify the environmental burden of its draft decision.

The '*Aircraft Noise Information Reporting Template Guidance*' document from ANCA states in section 3.2 Noi se Effects Data, that the assess ment of c osts of noise exposure should include cos ts of annoyance and costs of health.

The daa ha vefailed to quantify in monetary terms the costs on health of the population exposed to noise as a result of aircraft activity at Dublin Airport. This is a serious omission from the cost effective analysis.

HEALTH COSTS ASSESSMENT

The "*Airport Noise Infomration Reporting Template Guidance*" document from ANCA states the following at section 3.2:

3.2 Noise Effects Data

Using the noise exposure data, the effects information should be provided:

- Assessment of any significant effects of noise on sensitive receptors;
- Assessment of harmful effects due to long term exposure to noise from airport operations, including:
  - Number of people living in dwellings highly annoyed;
  - Number of people living in dwellings highly sleep disturbed;
  - Sub-totals per Electoral Division
    - Where effects are to be reported per Electoral Division, this should be achieved by prefixing the elements presented in the 'Health' tab to report designators for the Electoral Divisions
- Assessment of costs of noise exposure, including:
  - Costs of annoyance;
  - Costs of health.

We note that the daa did not submit any of these costs which is a glaring omission as the costs of same are in the order of €789 million euro per year which is alarming.

1.5 InterVISTAS Addendum

The hterVISTAS addendum from September 2023 ,as part of the Supplementary EIAR, predicted missing out on 0.9m passengers in 2024 and 1.6m in 2025. However, these figures for 2024 are already out of date and the predicted passenger bsses 'n 2024 didn't materialise nor did the €262-million losses. But the health costs will be above €750 million euro.

https://www.pleanala.ie/publicaccess/Responses/314485/Applicant's%20response%20including%20EIAR%20Supplement%2014-09-23/6.%20Dublin%20Airport%20Economic%20Impact%20of%20Operating%20Restrictions%20-%20Update/InterVISTAS_OperatingRestrictionsAddendum_6Sep2023.pdf?r=932508046349

Figure 2-1: Annual Passenger Traffic F orecasts Withand Without the Operating Restrictions

Millions of Passengers	2024	2025
2023 Forecasts		
Unconstrained	32.0	32.0
Constrained	31 .1	31.8
Difference	*0.9*	*0.2*
2021 Forecasts		
Unconstrained	30.8	32.0
Constrained	29.3	30.4
Difference	*1.6*	*1.6*

Figure 3-1: Forgone Economic Impact Resulting from Operating Restrictions

Impact	Number of Jobs	Full-Time Equivalents (FTEs)	Wages (€ Millions)	GVA (€ Millions)
2024 Impact				
Direct	440	390	20	40
Indirect	260	230	12	23
Induced	300	260	11	23
Catalytic	2,130	1,880	87	176
Total	**3,130**	**2,760**	**130**	**262**
2025 Impact				
Direct	80	70	4	7
Indirect	40	40	2	4
Induced	50	40	2	3
Catalytic	1,340	1,180	55	111
Total	**1,510**	**1,330**	**62**	**125**

It may be claimed that the reason the daa didn't have the 0.9m forgone passengers was due to the stay in the 65 nighttime flight limit. But according to ANCA's Noise Mitigation Effectiveness review report for 2023, https://www.fingal.ie/sites/default/files/2024-08/noise-mitigation-effectiveness-review-report-for-2023.pdf, figures on page 14 show that 13.9% of aircraft movements were during the nighttime period. 13.9% of 240,638 equates to 33,448 movements. 65 flights per night equates to 23,725 per year so just an additional 9,723 movements during the nighttime period. The loading factor in 2023 was 139 (33.522m / 240,638). So the additional nighttime passengers in 2023 above the 65 movement limit amounted to 1,351,497 (9,723 x 139). As the daa catered for 33.522m passengers in 2023, attaining 32m passengers cannot be attributed to an increase in nighttime movements.

If the Board is to apply the Balanced Approach, there's zero economic gain up to 2025 from the Relevant Action but over €750million in health costs. How can the Relevant Action be justified? Why incur such losses for no economic gain and inflict serious health damage on residents?

1.6 Belgian Superior Health Council Report

https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth_theme_file/20240506_hgr-9741_vliegtuiglawaai_en_andere_emissies_vweb.pdf

In the request from the Federal Minister of Social Affairs and Public Health to the Superior Health Council (SHC), as mentioned above, the following questions were put to the SHC:

a. *What are the direct and indirect effects on public health of the environmental noise generated by aircraft, both in terms of noise level and flight frequency, in the wider vicinity of the airport?*
b. *Are there any differences in the effects of daytime, early morning and night flights?*
c. *Is there any evolution in the assessment of these effects in the international scientific literature, and have any good studies been conducted on this subject in the vicinity of comparable airports in Western Europe whose methodology could be useful in Belgium?*
d. *What impact do these effects have on healthcare budgets and organisation?*
e. ***What are the policy recommendations on this issue?***

The policy recommendations in the report highlight the urgent need to reduce aircraft noise exposure. The main recommendation is a ban on night flights:

> *"Given the substantial evidence showing (severe) **negative health effects**, which are primarily related to sleep disturbance, the SHC believes that a complete **ban on night flights** between 11 pm and 7 am is most desirable from a health perspective to protect the well-being of the approximately 163 518 residents within the Lnight > 45 dB(A) noise contours of 2019. This measure should at least allow those living near the airport to benefit from **7 hours, ideally 8 hours, of sleep undisturbed by aircraft noise**. In addition, particular care should be taken to avoid a high concentration of flights in the shoulder hours early in the morning and late in the evening."*

Regarding flight paths the report recommends the following:

> *"The flight paths should be aligned in such a way that no one experiences an unacceptable nuisance in terms of the number of exceedances of the 60 dB(A) LA,max threshold, especially at night. In keeping with this concept (i.e. the prime importance of both peak intensity(LA,max/SEL) and the number of exposures), the herewith related number of sleep-disturbed people and the number of annoyed people should be kept as low as possible. Not only should no one be subjected to an unacceptable level of*

exposure, but care should be taken to keep the number of highly annoyed people as low as possible."

The report recommends no further increase in flight numbers:

"An expansion of the airport with the aim of achieving an increase in flight numbers is not acceptable given the current high burden on the neighbouring residents in terms of air pollution and noise exposure."

The report recommends that the aircraft movements exceeding 60dBA should be reduced to limit the impact on children's cognition. The report questions the effect of soundproofing schools:

"In light of the growing body of evidence that chronic aircraft noise impairs children's cognition and learning, the SHC believes that both LAeq and the number of daily overflights exceeding the 60 dB(A)-threshold that school children are exposed to should be reduced. It is doubtful whether soundproofing schools would contribute towards reducing the noise children are exposed to, whilst implementing this measure would entail that particular care should be taken to ensure sufficient ventilation (see SHC advisory report no. 9616 of 2021)."

The soundproofing of bedrooms is called into question stating that it's unrealistic and cannot be justified due to the lack of ventilation:

"The same holds for the soundproofing of bedrooms: it is unrealistic and cannot be justified, among other things because the lack of ventilation results in the same problems as in classrooms. Noise from outside enters through the vents, the ventilation itself is noisy, and lack of ventilation results in a considerable rise in indoor air pollution, as well as a thorough of the bedroom biotope (humidity, temperature) – a problem that will become increasingly serious with global warming – as shown by numerous studies (Mishra et al., 2018, Xu et al., 2021, Basner et al., 2023)."

The report highlights the relevance of single noise events exceeding 60dBA, and their frequency compared with average noise levels. This concurs with the evidence of Mr Fiumicelli.

"The most important indicator for assessing the impact of night and day flights is the frequency with which the maximum level reached by each flight exceeds 60dB(A) LA,max and the extent to which this threshold is exceeded. Yearly averaged acoustic levels (Lden, Lnight, LAeq) are widely used in policy making and follow-up as well as in communication between stakeholders and residents. The working group insists on the

fact that, from the point of view of the health impact of noise, the number of times a given event-related noise level is exceeded during a given time period is much more relevant than average acoustic energy levels. This means that, whilst a reduction in average noise levels (e.g. Lden) would be welcome, it could not be used as an excuse for increasing flight frequency. In fact, a decrease in Lden and/or Lnight at the regional or at the community level may easily be accompanied by a worsening impact on health, because it allows for more frequent flyovers e.g. when a few noisy aircraft are replaced by many more less noisy aircraft. As truly silent aircraft are not a realistic option in the near future, a high frequency of flyovers leads to a worst case scenario for sleep disturbance.''

The report recommends reducing air pollution and exposure to Ultra Fine Particles (UFP) in residential areas near the runways. Currently there is no monitoring of UFP levels at Dublin Airport.

"It is important that in the early morning and evening, when the air is most stable, emissions should definitely not increase any further"

The report concludes that the most significant reduction in the health impacts of aviation will come from a reduction in air traffic:

*"**Therefore, the most significant reduction in the health impact from air transport will indeed come from a global reduction in air traffic**. As a society, we should reflect on our (recent) dependency on immediate goods delivery processes and on the value we place on frequently flying to near or far destinations for business or leisure. The greening of air transport will essentially depend on our collective ability to reduce air traffic."*

1.7 Environmental Action Programme (EAP)

The 7th Environment Action Programme (7th EAP) provides an overarching policy framework for European environment policy up to and beyond 2020 and sets out a long-term vision for 2050.

Priority Objective 3 addresses challenges to '*human health and wellbeing*', such as air and water pollution and excessive noise.

Priority Objective 8 – '*Sustainable Cities*' notes that:

> "*Europe is densely populated and 80 % of its citizens are likely to live in or near a city by 2020. Cities often share a common set of problems such as [inter alia] poor air quality and high levels of noise*".

To safeguard the Union's citizens from environment-related pressures and risks to health and well-being, the **7th EAP aims to ensure that by 2020 noise pollution in the Union has significantly decreased, moving closer to the WHO recommended levels**. It notes that this implies "*implementing an updated Union noise policy aligned with the latest scientific knowledge, and measures to reduce noise at source, including improvements in city design*".

It is very clear from the Dublin Airport Noise Action Plans (NAPs) and the increase in noise levels at Dublin Airport, that Ireland has failed in relation to the 7th EAP.

On the 12th of May 2021, the EU Commission adopted the EU Action Plan "*Towards a zero pollution for air, water and soil*".

Target 2 of this Action Plan is:

> *"by 2030 the EU should reduce by 30% the share of people chronically disturbed by transport noise". This 30% reduction is from the reference year* ***2017*** *and is based on the EU study (2021) "Assessment of Potential Health Benefits of Noise Abatement Measures in the EU".*

At section 2.25 of the ANCA SEA draft environmental report by Noise Consultants it clearly states that "in the case of the European Commission's Zero Pollution Action Plan (2021), this

overarching EU policy sets clear targets with respect to reducing the number of people chronically disturbed b ytransport noise. As part of this action pla ntarget 2 states that:

> *"by 2030 the EU should reduce by 30% the share of people chronically disturbed by transport noise [from a **2017** baseline]".*

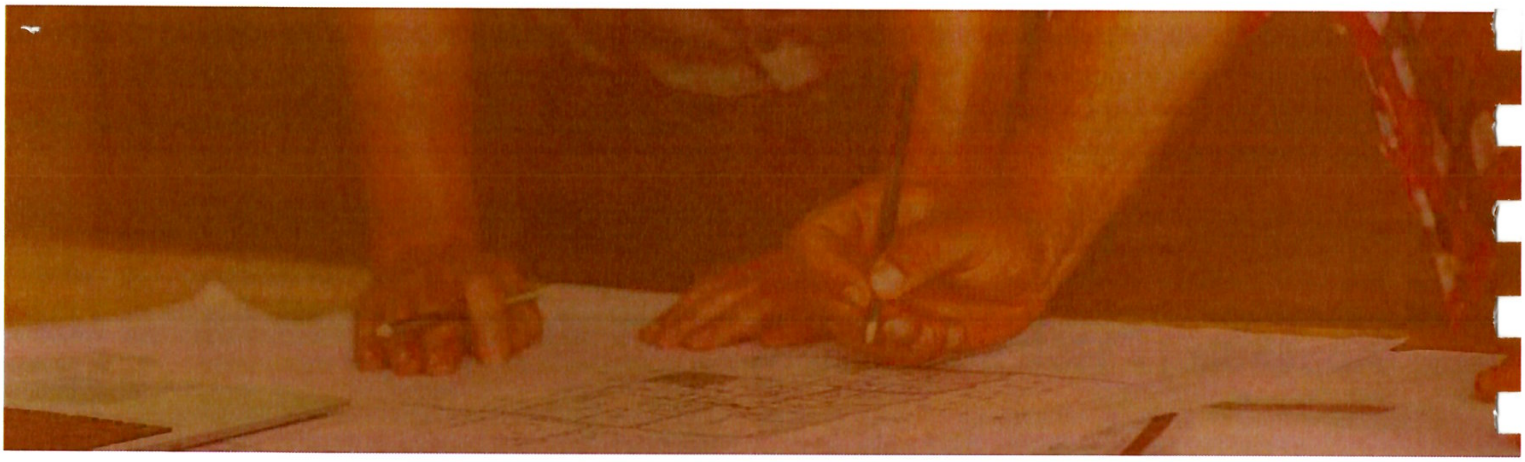
2.25 In the case of the European Commission's Zero Pollution Action Plan (2021), this overarching EU policy sets clear targets with respect to reducing the number of people chronically disturbed by transport noise. As part of this Action Plan, Target 2 states that:

> "By 2030 the EU should reduce by 30% the share of people chronically disturbed by transport noise [from a 2017 baseline]."

Yet ANCA have set the baseline at 2019 figures which was the busiest and noisiest year in the history of Dublin Airport, a year that Dublin Airport breached its passenger cap handling 32.9m passengers.

The Irish Government are at risk of breaching this EU adopted action plan by failing to reduce harmful noise by 30% from 2017 levels by 2030. By utilising 2019 as the baseline year for assessing noise at Dublin Airport, Ireland has not adhered to the EU Action Plan and is therefore on target to breach the 2030 requirements.

Appendix J – HSE Submissions



REVIEW OF HSE & ENVIRONMENTAL HEALTH SUBMISSIONS

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REVIEW OF HSE & ENVIRONMENTAL HEALTH SUBMISSIONS

1.0 HSE ENVIRONMENTAL HEALTH SECTION

1.0 HSE

This chapter includes submissions from various HSE Departments to Fingal County Council and ANCA.

1.1 Submissions

- HSE Department of Public Health submission on 01/02/2021 on initial planning application
- The HSE Environmental Health (EHS) section made a submission, dated 28/01/2021 on the daa's planning application F20A/0668 regarding the removal of night-time flight restrictions at Dublin Airport.
- The HSE EHS also made a formal submission dated September 29th, 2021, on the daa's revised planning application.
- The HSE EHS then made a sub mission dated February 24th 2022 to the Aircraft Noise Competent Authority's (ANCA) public consultation. It is worth noting that the HSE are not a statutory body for consultation purposes in the ANCA process.
- HSE Public Health Area A Department's submission on December 20th 2022 on the proposed Material Alterations to the Fingal Development Plan

1.2 HSE Dept Of Public Health Submission to Planning Authority

In the HSE Department of Public Health's sub mission, it highlights that:

- Noise can have negative impacts on human health and well-being.
- Environmental noise is among the top environmental risks to physical and mental health, and is associated with a substantial burden of disease in Europe.
- There is a plethora of evidence that sleep is a biological necessity, and that disturbed sleep is associated with a number of health problems.

- Noise disturbs sleeps by a number of pathways, and even at very low levels of noise, physiological reactions can be measured, such as increased heart rate, body movement and arousals.

It states that the proposed changes to the North Runway Planning Permission may have significant consequences for Public Health in the surrounding areas.

The submission then discusses the impact of lack of sleep on human health. It states that:

- Insufficient sleep and sleep disorders impact daily functioning, mood, cognition and cardiovascular health outcomes such as obesity, high blood pressure, diabetes, stroke and heart attack.
- Prevalence of poor sleep health is high, particularly amongst vulnerable populations such as racial/ethnic minorities and individuals of lower socioeconomic status. Many factors contribute to this high prevalence, including environmental factors.
- Noise has been shown to fragment sleep, reduce sleep continuity and reduce total sleep time.
- It is therefore important to identify and target determinants of sleep health, including environmental factors.
- Continuous exposure to aircraft noise increases the frequency of waking up during sleep and decreases slow-wave sleep (also known as deep sleep).
- The auditory system constantly scans the environment for potential threats, and humans perceive, evaluate and react to environmental sounds even when asleep. During sleep, night noise can be either intermittent (that is discrete noise events rather than constant background noise), or single noise event.
- When noise is accompanied by vibrations the combination of noise and vibration induces higher degrees of sleep disturbance than noise alone and other factors such as situational factors (depth of sleep phase, background noise level) and individual factors (noise sensitivity), contribute to whether or not noise will disturb sleep.
- Repeated noise-induced arousals lead to impaired sleep quality and recuperation, delayed sleep onset and early wakening, less deep and REM sleep, and more time spent awake and in superficial sleep stages.
- Noise may also prevent people from falling asleep again once woken. It is currently unclear how many additional noise- induced awakenings are acceptable and without consequence for sleep and health.
- When sleep is permanently disturbed and it becomes a sleep disorder, it is classified in the International Classification of Sleep Disorders as "environmental sleep disorder".

- Noise-induced sleep disturbance is an example of an environmental sleep disorder, which is a sleep disorder that causes complaints or either insomnia or daytime fatigue and somnolence .The exact prevalence of environmental sleep disorders is not known.
- It is generally accepted that insufficient sleep and sleep loss has a great influence on metabolic and endocrine functions, as well as on inflammatory markers, and it contributes to cardiovascular risk.
- C-reactive protein, an acute inflam matory marker, a predictor or strokes and heart attacks has been shown to lnearly increase with total and/or partial sleep loss.
- Leptin, which is involved in glucose regulation and weight control, decreases with sleep loss thus increasing appetite and predisposing to weight gain, impaired glucose tolerance (risk of diabetes) and impaired host response.
- Sleep loss also effects neurobehavioural function, especially neurocognitive performance.
- Noise also activates the stress response, and long-term noise exposures may lead, in persons liable to be stressed by noise, to permanently increased cortisol concentration above the normal range. Increased risk of cardiovascular disease is connected with stress.
- There is considerable evidence for a relationship between sleep and the immune system, and the immune response may be impacted by environmental noise during sleep.
- Disturbed sleep leads to dayti me sleepiness in 40% of affected subjects. As well as the potential health implications, daytime sleepiness interferes with work and social function and can have consequences including cognitive problems, motor vehicle accidents, poor job performance and reduced productivity .
- Time studies have indicated that the average amount of time people are in bed is 7.5 hours; therefore the average sleeping time would be somewhat shorter. There is considerable variation in sleeping time due to factors such as age and genetics.
- **It is therefore recommended that for these reasons, a fixed in terval of 8 hours is a minimal choice for night ti me protection, this protects about 50% of the population. It would take a 10 hour period to protect 80%.**

The submission then cites the WHO Noise Guidelines and lists the potential adverse health outcomes associated with aircraft noise:

- Ischaemic Heart Disease (IHD):
- Hypertension:
- Stroke:
- Children's blood pressure:

- Annoyance:
- Cognitive Impairment:
- Hearing and tinnitus:
- Sleep disturbance:

It cites the WHO report's strong recommendations:

- Reduce noise levels produced by aircraft below 45dB Lden, and reduce night noise levels produced by aircraft to below 40dB Lden, as aircraft noise above this level is associated with adverse effects on sleep.
- To reduce adverse health effects, the group strongly recommends that suitable measures to reduce noise exposure from aircraft in the population exposed to levels above these guideline values are implemented.

With regard to replacing Condition 5 with a Noise Quota, the report states:

> "*This would effectively increase the number of flights taking off and landing between 23.00 and 07.00, and* ***reduce the protected period of time during which flight restrictions exist in current permission****. Sleep is an important biological process for overall health, and noise has been shown to disturb sleep. In addition to sleep disturbance, aircraft noise is associated with a number of adverse health outcomes.*
>
> *Sleep time of 8 hours is thought to protect 50% of the population, therefore reduction of the restricted flight times to a 6 hour window between midnight and 6am may have an adverse effect on health outcomes. Proposed noise mitigation measures are welcomed, however* ***consideration should be given to whether these are sufficient to reduce night noise levels to recommended levels, especially in the summer months when air traffic is increased and windows are more likely to be open, modifying insulation effects****.*
>
> *The current WHO recommendation is to reduce noise levels to below 45dB Lden from 55 dB Lden for the hours between 0700 and 2300 and to reduce to below 40db Lnight from 40dB -45dB Lnight for night time hours between 2300 and 0700. This is a factor to consider in relation to the noise level contour, currently proposed by DAA, at night time noise levels of > 55dB Lnight, to qualify for noise abatement measures for homes in the vicinity of Dublin Airport****. In the case of Vienna airport, homes in the vicinity with noise levels >54 dB during the day and >45dB at night are eligible for assistance towards soundproofing****."*

The HSE concludes that:

> ***"The proposed changes may have the cumulative effect of increasing sleep disturbance in residents in the surrounding area, and increasing overall daily noise exposure despite proposed mitigation measures, with potential adverse health outcomes."***

1.3 HSE EHS Submission # to Planning Authority

For daytime noise (Lden) the HSE references the WHO 2018 Guidelines stating:

> ***"The WHO 2018 Noise Guidelines strongly recommends reducing noise levels produced by aircraft below 45 dB Lden, as it states that aircraft noise above this level is associated with adverse health effects."***

On daytime noise, the submission concludes:

> "***While the EHS welcomes the significant reduction in the people exposed to airline noise between the 2018/2019 baseline and the 2022/2025 forecast baseline scenario it still acknowledges that a significant proportion of people, namely 63316 people assessed as highly annoyed and 128 people exposed to at least a high noise level based on the 2025 baseline scenario, will still be exposed to airline noise above the WHO recommendation of 45Lden.***"

For night-time noise (Lnight) the HSE again references the WHO 2018 Guidelines stating:

> ***"The WHO 2018 Noise Guidelines strongly recommends reducing noise levels produced by aircraft during night time below 40 dB Lnight, as it states that aircraft noise above this level is associated with adverse effects on sleep."***

On night-time noise (Lnight) the submission concludes:

> "***While the EHS welcomes the significant reduction in the people exposed to airline noise between the 2018/2019 baseline and the 2022/2025 forecast baseline scenario it still acknowledges that a significant proportion of people, namely 19464 people assessed as highly sleep disturbed and 281 people exposed to at least a high noise level based on the 2025 baseline scenario, will still be exposed to airline noise above the WHO recommendation of 40Lnight.***"

The submission discusses the research by the WHO on the impact of aircraft noise on health:

> ***"The World Health Organisation's Environmental Noise Guidelines 2018 summarise the research into the impact on health and exposure to aircraft noise. The critical health outcomes identified were:***
>
> ***For average noise exposure*** ***For night noise exposure***

1. *Cardiovascular disease*
2. *Annoyance*
3. *Cognitive impairment*
4. *Hearing impairment and tinnitus*
5. *Adverse birth outcomes*
6. *Quality of life, well-being and mental health*
7. *Metabolic outcomes*

1. Effects on sleep

As already outlined above the WHO strongly recommends reducing aircraft noise levels to below 45 dB Lden, and for night noise exposure to below 40 dB Lnight, as aircraft noise above these levels is associated with the above adverse health effects.

In order to reduce these health effects, the WHO strongly recommends that policy-makers implement suitable measures to reduce noise exposure from aircraft in the population exposed to levels above the guideline values for average and night noise exposure. For specific interventions the WHO recommends implementing suitable changes in infrastructure."

The HSE EHS further state:

"***The EHS acknowledges that the increase in people exposed to 50 dB Lden and 45 dB Lnight may result in adverse health effects as outlined in the World Health Organisation's Environmental Noise Guidelines 2011. Due to this the EHS feels that the mitigation measures proposed must be reflected in these increased numbers in order to reduce as much as possible the number of people exposed. The EHS also feels that the WHO levels of 45 dB Lden and 40 dB Lnight should be used when assessing eligibility for schemes such as the sound insulation improvement works."***

The HSE EHS are very clear that 45 dB Lden and 40 dB Lnight should be used for assessing insulation improvement works. This is in line with the proposed amendment in the Development Plan and justifies its inclusion.

1.4 HSE EHS Submission #2 To Planning Authority

The submission concludes:

"The EHS makes the following observations in relation to this proposed development:

- ***The Conditions 3(d) and 5 were put in place to protect public health so if planning authority are going to increase the hours of operation they must ensure all who are significantly impacted have the opportunity of mitigation.***

- ***All efforts should be made by the DAA to ensure as many people as possible are protected from the adverse health effects associated with aircraft noise as outlined above inthis report. This must include reducing aircraft noise levels to below 45 dB Lden, and for night noise exposure to below 40 dB Lnight.***
- ***The EHS is of the opinion that The World Health Organisation's Environmental Noise Guidelines of 45 dB Lden and 40 dB Lnight should have been used for ground noise assessments.***"

The HSE clearly state that Conditions 3(d) and 5 were put in place to protect public health and any changes to the planning conditions must ensure that mitigation is provided to all those who are significantly i mpacted. Noise levels must be reduced to below 45 dB Lden and 40 dB Lnight.

1.5 Submission to ANCA

h their submission to the ANCA draft regulatory decision, the HSE EHS section state that in relation to Condition 1 of the Draft Regulatory Decision:

> "*The rationale given is not a rationale for revoking condition 5 of the current planning permission, but is a rationale for the Noise Quota Scheme proposed.*"

It further states that in relation to condition 2:

> "*The rationale given for amending the existing conditions is not given. The reasons given are for the new controls, which are less stringent than existing.*"

The HSE submission states that the existing Planning Conditions are in place to protect public health and that:

"***The operating restrictions already exist and the Draft Regulatory Decision is to revoke and amend them, there should therefore be a clear rationale for this and clear evidence that the mitigation measures proposed will ensure there is not a diminishing of health protection that is compliant with the existingoperating restrictions.***"

It is very evident that revoking and amending the existing conditions will result in a diminishi rg of healt hprotection. From table 7.21 of ANCA's Regulatory Decision Report the number of people Highly Sleep Disturbed increases from 22500 to 37080 by revoking and amending the existing planning conditions .The populations exposed to night-time noise >55dB Lnight will increase from 280 to 1059.

Table 7.21: Population HSD, HA and exposed above the NAO priorities in 2019 and in 2025 for the modelled runway use and restriction scenarios

Scenario	Population HSD	Population > 55 dB L_{night}	Population HA	Population > 65 dB L_{den}
2019 Situation	47,045	1,533	115,738	285
2025 P01 30.4 mmpa	22,500	280	64,241	119
2025 P02 32.0 mppa	37,080	1,059	79,405	196

The HSE state that if the planning authority and ANCA are going to increase the hours of operation of the runways, then they must ensure all who are significantly impacted have the opportunity of mitigation. This is not the case with the current application as only those 'highly significantly' and 'profoundly' affected are offered mitigation in the form of insulation.

The HSE also reiterates its previous submissions to the Planning Authority:

> ***"The Conditions 3(d) and 5 were put in place to protect public health so if planning authority are going to increase the hours of operation they must ensure all who are significantly impacted have the opportunity of mitigation."***

The HSE references the WHO 2018 Guidelines and notes that 45dB Lden and 40dB Lnight are "**strong recommendations based on a complete review of the health research around aircraft noise.**"

3.3 Aircraft noise

Recommendations

For average noise exposure, the GDG **strongly** recommends reducing noise levels produced by aircraft below **45 dB** L_{den}, as aircraft noise above this level is associated with adverse health effects.

For night noise exposure, the GDG **strongly** recommends reducing noise levels produced by aircraft during night time below **40 dB** L_{night}, as aircraft noise above this level is associated with adverse effects on sleep.

To reduce health effects, the GDG strongly recommends that policy-makers implement suitable measures to reduce noise exposure from aircraft in the population exposed to levels above the guideline values for average and night noise exposure. For specific interventions the GDG recommends implementing suitable changes in infrastructure.

They further reiterate their view that:

"It is therefore important that the noise mitigation measures are made available to all parties that are significantly impacted by the proposal to ensure protection of health."

The current proposal has failed to cater for all populations significantly affected by noise. It will result in a diminishing of health protection.

Astonishingly the HSE submissions are not mentioned in ANCA's Consultation Report. It is also worth noting that ANCA never formally requested the HSE to make a submission to their consultation process. It is a serious dereliction of their duties to not invite the State agency whose role is to protect Public Health.

1.6 HSE Public Health Area A Department's Submission to Proposed Material Alterations to The Fingal Development Plan

The HSE Public Health Area A made a submission on the Material Alterations to the Development Plan and made specific reference to PA CH 1.1. They state that:

> *"International evidence is in abundance demonstrating the increased exposure to aircraft noise is associated with an increase in diagnoses of cardiovascular disease, substance misuse/mental health emergencies and insomnia among local residents.*
>
> *There has been considerable research into the effect of aircraft noise on cognitive performance in schoolchildren, due to the interruptive nature of high levels of aircraft noise. Research has suggested effects on reading comprehension and memory. Cognitive performance affects attention, perception, mood, learning and memory. There is evidence to suggest that long-term aircraft noise has a harmful effect on memory, sustained attention, reading comprehension and reading ability. Early studies highlighted that aircraft noise was also implicated in children from noisy areas having a higher degree of helplessness i e. were more likely to give up on difficult tasks than those children in quieter areas. Reports often indicated that children exposed to long-term aircraft noise showed a higher degree of annoyance than those children from quieter areas. Evidence has been presented to suggest that children do not habituate to aircraft noise over time, and that an increase in noise can be correlated with a delay in reading comprehension compared to those children not exposed to high levels of aircraft noise.*
>
> *A 2021 study was the first to investigate the role of annoyance due to aircraft noise and of sensitivity to noise in the association between aircraft noise exposure and medication use, with a large European study population. The results showed significant associations between aircraft noise annoyance and the use of antihypertensive, anxiolytic-hypnotic-sedative, and anti-asthmatic medication, as well as between aircraft noise exposure and antihypertensive medication use".*

The HSE conclude that:

> ***"HSE Public Health Area A strongly supports the development and implementation of measures to mitigate against excess aircraft noise, and advocates that such measures are expedited insofar as possible".***

2.0 FINGAL ENVIRONMENTAL HEALTH AIR & NOISE UNIT

2.0 Fingal County Council

This chapter includes a submission from Fingal's Environmental Health Air & Nosie Unit, dated 15/10/2021, on the daa's revised planning application.

2.1 Submission to Planning Authority

The submission references the EIAR that has identified that a significant portion of people will be exposed to high levels of noise:

Noise level exposure – Proposed scenario v's Permitted scenario:

2022- 4% more people are likely to be highly annoyed by the 2022 proposed scenario than that of permitted scenario for 2022.

2022 -2% more people are likely to be highly sleep deprived by the 2022 proposed scenario than that of the 2022 permitted scenario.

2025-24% more people are likely to be highly annoyed by the 2025 proposed scenario than that of the 2025 permitted scenario.

2025- 65% more people are likely to be highly sleep deprived by the 2025 proposed scenario than that of the 2025 permitted scenario.

2035-19% more people are likely to be highly annoyed by the 2035 proposed scenario than that of the 2035 permitted scenario.

2035-65% more people are likely to be highly sleep deprived by the 2025 proposed scenario than that of the 2025 permitted scenario.

The submission references the WHO 2018 Guidelines:

> ***"The 2018 WHO guidelines strongly recommend reducing night noise exposure levels produced by aircraft during night time to below 40dB Lnight. Aircraft noise above these levels are associated with adverse health effects. The DAA have***

modelled the night time insulation programme on exposure levels of 55dB which leaves a significant proportion of people exposed to night time levels above the 40dB exposure level recommended by WHO.'

The submission further states that the removal of Condition 3(d) and the replacement of Condition 5:

"will have an adverse effect on a large percentage of the population."

The submission concludes:

"It is recommended that consideration is given to the proposed noise mitigation measures i.e. to provide an extension of the noise insulation schemes to include the 2018 WHO Environmental noise guidelines."

Appendix K – Dr Garvey Letter

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REPORT

Re: Noise effects on health and sleep in the context of proposed amendments to planning conditions for the North Runway at Dublin Airport

An Bord Pleanála Case Number: ABP-314485-22
Fingal Ref Number: F20A/0668

Date of report: 20/12/2024

Prepared on behalf of St. Margarets The Ward Residents Group

This report represents an addendum to my previous report, dated 22/11/2023, addressing the health impacts of night-time aircraft noise in the context of proposed operational changes at Dublin Airport. This addendum specifically comments on independent calculations of noise-induced awakenings. It also addresses specific points concerning population vulnerabilities, circadian rhythm disruptions, and the impracticalities of certain mitigation measures, such as soundproofing, in light of scientific findings and health recommendations. It is my opinion, that the findings underscore the significant health risks, carrying significant healthcare-related costs, posed by the proposed changes at Dublin Airport.

Assessment of Additional Awakenings

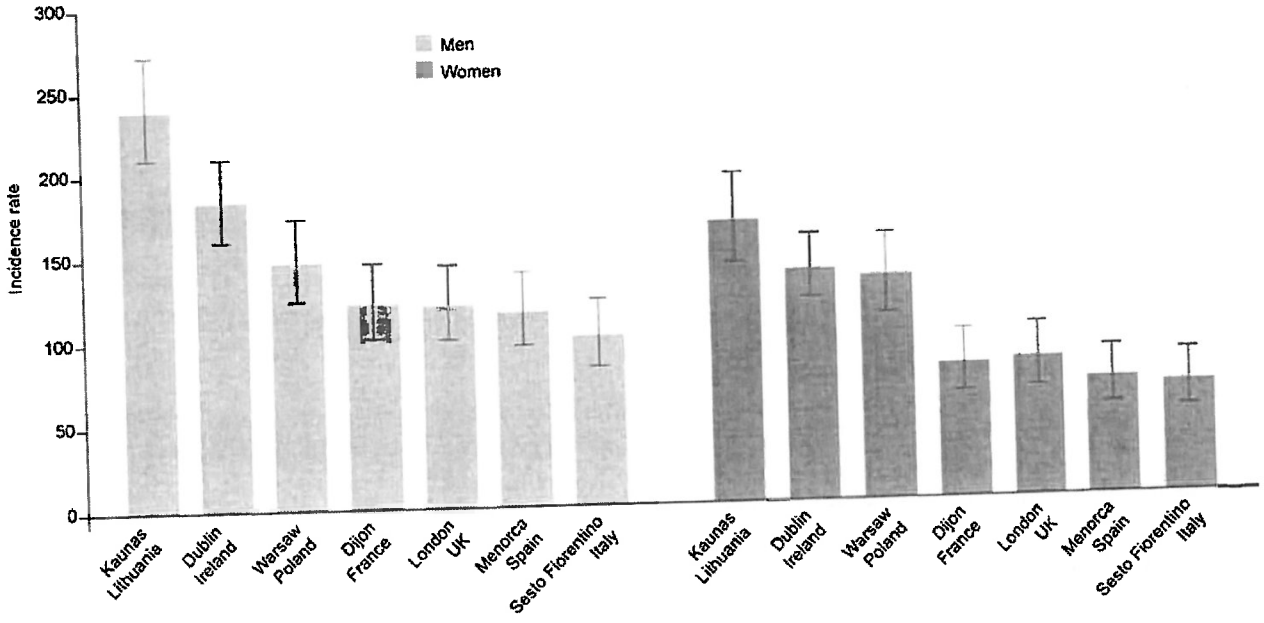
An independent analysis by Suono Consultancy Limited indicates that 4 out of 5 Noise Monitoring Terminals (NMTs) in the affected areas exceed the threshold of less than 1 additional awakening per night, even after accounting for noise insulation improvements (21–22 dB reduction). Despite the Dublin Airport Authority's (DAA) response to the RFI by An Bord Pleanála (ABP), which provided only vague totals of awakenings across the greater Dublin area without spatial contours, this analysis demonstrates that large areas of the community will experience significant sleep disturbances. Such contours, detailing areas experiencing 1, 2, or 3 additional awakenings, are critical to understanding the geographic and demographic extent of the impact, yet were omitted by the DAA.

The analysis further highlights specific areas such as St. Doolaghs (NMT2) and Oscar Pappa/Coast Road (NMT20), where calculated additional awakenings reach 2.1–3.0 per night under the proposed operational scenario. These values are particularly concerning for residents in these areas, particularly those who are already experiencing significant health vulnerabilities. For communities such as Kilcoskan National School (NMT26) and Newpark (NMT28), where no prior night-time awakenings were recorded, even a single additional awakening represents a substantial degradation in sleep quality. These elevated awakening levels underscore the necessity for rigorous mitigation measures and the implementation of stricter operational limits to minimize sleep disruption and its cascading health effects on the population.

These findings call into question the adequacy of the DAA's proposed mitigation strategies and emphasize the importance of adopting a comprehensive framework that prioritizes minimizing additional awakenings and the irassociated impacts on vulnerable populations.

Elevated Risks for North Dublin Residents

North Dublin already has a significantly higher stroke incidence rate compared to other European cities, as demonstrated by the *North Dublin Population Stroke Study* (see figure below).[1] Key factors include elevated prevalence rates of hypertension, atrial fibrillation, and smoking. Early case-fatality rates for primary intracerebral haemorrhage (41%) and subarachnoid haemorrhage (46%) further highlight the vulnerability of this population. The introduction of additional noise-induced arousals will likely exacerbate these pre-existing health challenges.



Vulnerability of Specific Populations

The assumption that the affected population is uniformly healthy is unfounded. Elderly residents, a significant proportion of the local population, are particularly vulnerable due to lighter and fragmented sleep, which predisposes them to frequent awakenings and elevated stress responses. Research also highlights that an increased arousal index is inversely related to cardiovascular health.[ii] In a region already facing disproportionate stroke rates, such disruptions may have severe consequences for those with heightened cardiovascular risk.

Circadian Rhythm Disruption and Actigraphic Findings

Circadian rhythm disturbances caused by night-time noise have far-reaching health implications, as demonstrated by actigraphic metrics such as Relative Amplitude (RA), Intradaily Variability (IV), and Interdaily Stability (IS).[iii] Specific findings include:

- **RA**: Reduced in groups such as caregivers (−0.02) and individuals with diabetes (−0.06), within ranges linked to adverse mental health outcomes.
- **IV**: Increased by 0.08 in elderly individuals exposed to ≥55 dB L_{night}, suggesting fragmented activity patterns associated with a 22% higher mortality risk per 1 (standard deviation) SD increase.
- **IS**: Decreased IS values denote erratic activity-rest rhythms, linked to poor health outcomes, further exacerbating risks in high-stress populations.

Health Implications of Noise Disruptions

The cumulative effects of night-time aircraft noise include elevated risks for cardiovascular diseases, including hypertension and atrial fibrillation.[iv,v] Sleep fragmentation has also been shown to worsen glucose metabolism in individuals with diabetes and significantly deteriorate mental health in caregivers.[vi,vii] For the elderly population, increased IV and decreased IS represent clear indicators of increased mortality risk and diminished quality of life.

Economic Costs and Disability-adjusted life years (DALYs) Associated with Increased Noise Exposure

Supporters of expansion of activity at Dublin Airport often emphasize the potential economic benefits of increasing the movement cap at Dublin Airport, but this narrative neglects the substantial health care-related costs associated with noise exposure. The health-economic analysis from Brussels Airport provides a critical lens:[viii]

1. **Sleep Disturbance:**
   - 109,000 people highly disturbed during sleep resulted in **7,630 DALYs** and an economic cost of **€1,007 billion per year.**
2. **Annoyance:**
   - Noise annoyance affected 220,000 individuals, amounting to **4,380 DALYs** and a cost of **€578 million annually.**
3. **Cardiovascular Diseases.**
   - Elevated risks for ischemic heart disease and hypertension were calculated to affect 53,000 and 51,000 individuals, respectively, resulting in **6,800 DALYs** and a cost of **€900 million per year.**

The Brussels case illustrates the significant healthcare costs of aircraft noise, which should be weighed against the purported economic benefits of increased airport activity. Applying similar methodologies to Dublin would likely reveal analogous, if not greater, impacts given the pre-existing health vulnerabilities in North Dublin.

Challenges with Noise Mitigation in Schools and Bedrooms

Mitigation measures such as soundproofing schools and bedrooms are impractical and potentially counterproductive. The Belgian Superior Health Council report emphasizes that while sound proofing may reduce noise intrusion, it introduces challenges related to ventilation and indoor air quality.[ix] For schools, ensuring adequate ventilation within soundproofed environments becomes a critical concern, potentially exacerbating indoor air pollution and negatively impacting the learning environment. Similarly, in residential settings, soundproofed bedrooms face issues of increased humidity, poor air circulation, and rising indoor temperatures, all of which detrimentally affect sleep quality and overall health.

Potential Benefits of a Night-Flight Ban for North Dublin

The implementation of a night-flight ban at Dublin Airport, similar to those already established at major international airports such as Frankfurt, Sydney, and Zurich, could yield substantial public health benefits for the North Dublin region, where the prevalence of stroke and cardiovascular conditions is notably high. Evidence from Frankfurt Airport, which implemented a night-flight ban from 11 PM to 5 AM, demonstrated a **27.5% reduction in noise-induced awakenings** and improved sleep quality among residents. These benefits were particularly pronounced for individuals whose sleep schedules coincided with the ban, reducing the adverse health impacts of disrupted sleep cycles.[x]

Research also highlights the heightened risks faced by older populations living near airports. A large-scale U.S. study found that older adults (≥65 years) residing near airports were 3.5% more likely to be hospitalized for cardiovascular conditions for every 10 dB increase in night-time aircraft noise exposure. This association underscores the compounded vulnerability of elderly individuals with pre-existing cardiovascular risks.[xi]

The recommended duration of sleep, 7–9 hours per night for adults and 9–11 hours for children, is critical for health and well-being. Noise exposure during sensitive sleep phases—particularly the early morning

hours—can exacerbate cardiovascular and metabolic risks through mechanisms involving sleep fragmentation and stress hormone release. The observation is especially pertinent for vulnerable populations such as those with impaired health or sleep disorders. Extending a night-flight ban into the morning hours would allow a larger portion of the population to benefit from undisturbed sleep.

The health and economic rationale for such measures is compelling. As demonstrated at Frankfurt and Zurich airports, night-flight bans not only reduce noise exposure but also mitigate healthcare costs associated with cardiovascular diseases and sleep-related disorders. Considering Dublin's unique health challenges and the international precedent, adopting a longer night-flight ban could significantly enhance public health outcomes while addressing community concerns about environmental noise.

Recommendations

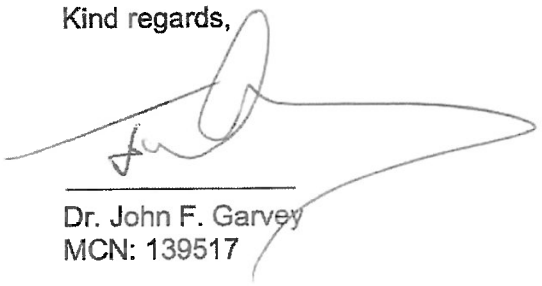
To address these significant concerns, it is my opinion that the following actions are urgently needed:

1. **Retain the 13,000-Movement Cap**: Night-time movement limits are critical to minimizing disruptions and associated health risks.
2. **Comprehensive Noise Mapping**: The DAA must provide detailed contour maps of areas experiencing 1, 2, and 3 additional awakenings to align with international standards.
3. **Targeted Health Surveillance**: High-risk populations, including the elderly and those with chronic illnesses, should be closely monitored for the long-term effects of noise exposure.
4. **Community Engagement and Mitigation Measures**: Efforts must focus on fostering transparency and collaboration with affected residents to rebuild trust and address grievances effectively. Mitigation measures should where possible holistically address both noise and indoor environmental quality.
5. **Health-economic Assessment**: Incorporate health-economic costs, including DALYs and associated financial impacts, into decision-making frameworks.
6. **Consideration of implementation of a Night-Flight Ban**: Implementation of a night-flight ban would significantly reduce sleep disruptions and protect vulnerable populations. Extending the ban into morning hours would provide additional benefits for late sleepers.

Summary

The evidence clearly demonstrates the significant health risks posed by the proposed changes to Dublin Airport's operational hours. These risks are magnified in North Dublin, where elevated stroke incidence and cardiovascular vulnerability underscore the urgency of action. The omission of detailed noise mapping and health impact data from the DAA's response further highlights the inadequacy of the current approach. Comprehensive mitigation measures, informed by independent analysis and community needs, are essential to safeguard public health. A night-flight ban, coupled with movement caps and robust noise mitigation measures, offers a proven strategy to balance economic and public health priorities.

Kind regards,



Dr. John F. Garvey
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Appendix L – AA Discussion

Appendix K – Dr Garvey Letter

APPROPRIATE ASSESSMENT REVIEW

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APPROPRIATE ASSESSMENT REVIEW

1.0 Appropriate Assessment

1.1 Board's AA Review

In the draft decision by the Board, a report was provided on the '*Adequateness of information for purpose of Screening for Appropriate Assessment*', https://www.pleanala.ie/anbordpleanala/media/abp/cases/reports/314/r314485-appendix-3.pdf?r=160513.

Section 1.1 deals with the scope of the report. In section 1.1.3 it states that the Board's ecologist only reviewed and examined the following two documents:

- Appropriate Assessment Screening Report, AECOM (2021)
- Addendum to Appropriate Assessment Screening Report (2023)

There is no mention of the appeal documents or any of the other submissions. This is clearly a substandard exercise as significant detailed submissions were made on the inadequacies of the Appropriate Assessments submitted by the daa. As the Board's ecologist failed to take these appeals into account, a thorough and rigorous analysis of the AA documents and the issues raised in the appeals are not addressed in this report. This is a serious failure in the process and the Board need to be made aware of the inadequacy of this Appropriate Assessment review.

In section 2.2.3 of the report, it states that the screening report from AECOM included bird surveys conducted at Baldoyle Bay SPA and Rogerstown Estuary SPA 2016-2018. Note that the last bird survey carried was in 2018, over six years ago. These surveys are no longer valid and should be redone and up to date. This is a very serious omission from the Board's ecologist to not declare that these surveys are out of date. The Chartered Institute of Ecology and Environmental Management (CIEEM) is the leading professional membership body representing and supporting ecologists and environmental managers in the UK, Ireland and abroad. The CIEEM have provided an advice note '*On the Lifespan of Ecological Reports & Surveys*', dated April 2019, https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf. The advice note states that:

"It is important that planning decisions are based on up-to-date ecological reports and survey data".

A table is provided in the note detailing the age of the survey and its validity. For surveys older than 3 years it states:

"The report is unlikely to still be valid and most, if not all, of the surveys are likely to need to be updated (subject to an assessment by a professional ecologist".

AGE OF DATA	REPORT / SURVEY VALIDITY
Less than 12 months	Likely to be valid in most cases.
12-18 months	Likely to be valid in most cases with the following exceptions: • Where a site may offer existing or new features which could be utilised by a mobile species within a short timeframe (see scenario 1 example); • Where a mobile species is present on site or in the wider area, and can create new features of relevance to the assessment (see scenario 2 example); • Where country-specific or species-specific guidance dictates otherwise. Report authors should highlight where they consider it likely to be necessary to update surveys within a timeframe of less than 18 months.
18 months to 3 years	A professional ecologist will need to undertake a site visit and may also need to update desk study information (effectively updating the Preliminary Ecological Appraisal) and then review the validity of the report, based on the factors listed below. Some or all of the other ecological surveys may need to be updated. The professional ecologist will need to issue a clear statement, with appropriate justification, on: • The validity of the report; • Which, if any, of the surveys need to be updated; and • The appropriate scope, timing and methods for the update survey(s). The likelihood of surveys needing to be updated increases with time, and is greater for mobile species or in circumstances where the habitat or its management has changed significantly since the surveys were undertaken. Factors to be considered include (but are not limited to): • Whether the site supports, or may support, a mobile species which could have moved on to site, or changed its distribution within a site (see scenario 1&2 examples); • Whether there have been significant changes to the habitats present (and/or the ecological conditions/functions/ecosystem functioning upon which they are dependent) since the surveys were undertaken, including through changes to site management (see scenario 3 example); • Whether the local distribution of a species in the wider area around a site has changed (or knowledge of it increased), increasing the likelihood of its presence (see scenario 4 example).
More than 3 years	The report is unlikely to still be valid and most, if not all, of the surveys are likely to need to be updated (subject to an assessment by a professional ecologist, as described above).

This was also referred to in Case C-43/10, paragraph 115:

> *"In the light of the foregoing, it cannot be held that an assessment is appropriate where information and reliable and updated data concerning the birds in that SPA are lacking."*

It is very clear that the surveys submitted by AECOM on behalf of the daa are out of date and the surveys are no longer valid and need to be updated. This Planning application cannot be approved with such out of date surveys and would be a clear area for Judicial Review if allowed to proceed. The Inspector must inform the Board members of this serious flaw in the application. It is important to note that the out-of-date surveys were reported on in the appeals' documentation, but the Board's ecologist has not had access to the appeals and therefore is not aware of this major flaw having been highlighted. The Board's ecologist makes the point that she considers '*that the scientific information on European sites, species and habitats is adequate and up to date (at the time of submission)*'. It is interesting that she is of the belief that the time of submission is important. The Board should be reminded that the surveys were carried out in the 2016-2018 timeframe and the planning application submitted in December 2020. Further Significant information was requested by the planning authority and received in September 2021. It is clear that even at the time of submission that the surveys were out of date. But the Board should be aware that it is the time of the Board's decision that is critical to the age of the surveys. If the Board makes a decision on a date and the surveys are already over six years old, then there's no possibility that the Board can make a proper determination based on such old surveys.

Section 2.2.5 of the Board's ecologist's report references the literature review in the AECOM report and that studies showed that noise levels of around 60dB(A) or lower are unlikely to result in disturbance responses. It is worth repeating what exactly the AECOM report states in section 2.11:

> *"The University of Hull subsequently produced refined guidance in the Waterbird Disturbance Mitigation Toolkit (Cutts et al, 2013). It concluded that:*
>
> - *High level disturbance effects are likely with continuous noise above 72 dB(A) or **sudden noise above 60 dB(A);***
> - *Moderate level disturbance effects are likely with regular noise of 60 – 72 dB(A) or **sudden noise of 55 – 60 dB(A)**; and,*
> - *There is unlikely to be any response by waterbirds to any noises below 55 dB(A)".*

Therefore, to be clear, **sudden noise such as aircraft noise between 55 – 60dB(A) is likely to cause moderate level disturbance and sudden noise greater than 60dB(A) is likely to cause high level disturbance.** Sudden noise is considered to be LAmax noise. In humans, awakenings occur due to LAmax single noise events as opposed to continuous noise. This is a

key element of the report from the Board's Noise Expert, Mr Fiumicelli. Therefore, it's these LAmax single noise events that can have major impacts.

The AECOM AA screening report lists the Brent Goose as an inhabitant of the Malahide Estuary, Baldoyle Bay, Rogerstown Estuary, South Dublin Bay and River Tolka Estuary and North Bull Island SPAs. The Waterbirds Disturbance Mitigation Toolkit (Cutts et al), references the Brent Goose on slide 21 and states that:

> "*Brent Geese are a species highly sensitive to noise disturbance and they react in a variable manner to visual disturbance (Smit & Visser, 1993). From this study they were found to react to up to 92% of aircraft passes although this declined to 64% with habituation. Although there is an element of visual disturbance with aircraft, often the noise is the greater stimuli, especially when the aircraft fly high*".

Section 2.2.8 of the report to the Inspector references the field surveys undertaken and states that they were undertaken in June 2016 to Dec 2017 and in April and May 2018 at locations in Baldoyle Bay SPA and Rogerstown Estuary SPA. Whilst Baldoyle Bay SPA is un derneath the flight path of the South Run way, Rogerstown Estuary SPA is not. Rogerstown Estuary is now impacted by flights off the new North Runway, but the North Runway only opened in August 2022. Therefore, none of the surveys were carried out during North Runway operations to determine the impact of its flight paths on the SPAs overflown. This is a serious flaw in the AA screening and was not picked up by the Board's ecologist. It is impossible to determine the impact on a SPA if no surveys are carried out while aircraft are flying overhead. Therefore, the Board cannot come to a conclusion that there are no significant effects on the birds impacted by the North Runway.

h Chapter 11 of the EEA's '*European environment – state and outlook 2020*' report, Box 11.3 refers to the effects of noise on wildlife. It refers to a study by Dominoni et al (2016) which showed that songbird species started their dawn song earlier due to aircraft noise compared to the same species unaffected by aircraft noise. It was also suggested that noise greater than 78dB(A) can impair acoustic co mmu nication in birds. In conclusion they state:

> *"our study offers a new perspective on the effects of anthropogenic noise on the behavior of birds, indicating that birds may be adjusting their mating signals and time budgets in response to intense anthropogenic noise, both on the level of circadian rhythms and the level of short-term responses to fluctuating noise levels. Such individual adjustments to ecological novelty have the potential to affect the fitness of the singer and thus, in the long-term, might even change population dynamics."*

This has also been supported by Gil et al (2014) who state that:

> "*The results show that indeed the overlap of song chorus with aircraft noise was the key factor that influenced time advancement. Aircraft traffic time was the main predictor of song advancement: across Europe, those bird populations whose singing time overlapped the most with aircraft traffic were those that advanced their song timing to a higher extent. Our results exemplify how behavioral plasticity may allow the survival of avian populations in areas of high noise pollution. However, such an adaptation likely involves departing from optimal singing times, leading to higher energetic costs and amplifying between-species differences in competitive ability and resilience.*"

and Sierro et al (2017) who conclude that:

> "*In relation to long-term noise-induced changes in singing behavior, our results agree with former evidence that birds advance the onset of chorus in locations where background levels rise at dawn. Finally, we provide evidence that anthropogenic noise may induce birds to increase the time singing at dawn, suggesting higher fitness costs in relation to daily energy expenditure*".

Basically, the birds had to spend more time singing and using more energy to counter the effects of aircraft noise.

What is very worrying about the Literature Review by AECOM is that none of the above 3 publications referred to in the EEA's State of the Environment Report are mentioned in AECOM's report. These 3 publications are specifically about the effects of aircraft noise on birds and yet AECOM omitted them. It is clear that the conclusions from these 3 reports do not align with AECOM's report and the Board's ecologist has not read any of the appeals' documentation and therefore hasn't made a balanced determination on the effects of aircraft noise on birds. This conflicts with the comment in section 2.2.11 that '*Based on the scientific information presented by the applicant, I am satisfied that the Inspector and the Board have adequate information which conforms to the requirement being objective and of best scientific knowledge, upon which to base their screening determination*'.

BOX 11.3
Effects of noise on wildlife

Although the focus of the Environmental Noise Directive is on reducing the harmful effects of noise on human health, noise also affects wildlife. Whether in the terrestrial or the marine environment, many species rely on acoustic communication for important aspects of life, such as finding food or locating a mate. Anthropogenic noise can potentially interfere with these functions and thus adversely affect diversity of species, population size and population distribution.

One of the most studied effects of anthropogenic noise on wildlife is its impact on the singing behaviour of birds (Gil and Brumm, 2013). A study in the forest near Tegel airport in the city of Berlin found that some songbird species started their dawnsong earlier than the same species singing in a nearby forest that was less affected by aircraft noise (Dominoni et al., 2016). The authors of the study concluded that the birds in the vicinity of the airport started singing earlier in the morning to gain more time for uninterrupted singing before the aircraft noise set in. In addition, it was found that during the day, chaffinches avoided singing during aircraft take-off when the noise exceeded a certain threshold, 78 dB(A), further suggesting that airport noise can impair acoustic communication in birds. ■

1.2 Field Surveys

The topic of Field Survey is limited to sections 4.20 to 4.24. In section 4.5 it was stated that the technical report detailing the results of targeted ornithological survey conducted at Baldoyle Bay and Rogerstown Estuary were provided as an Appendix to the AA Screening Report. However, no such report was included in the appendices. Therefore, how could the Board's ecologist make any determination based on surveys that were never attached to the application? This is a very worrying outcome and one that the Board members need to be made aware of.

What is also worrying is that the surveys appeared to focus on disturbances only. Disturbance event monitoring does not encompass all aspects of the assessment of Likely Effects. The NPWS Guidelines on Appropriate Assessment list the following significance indicators, one of which is disturbance:

Impact type	Significance indicator
Loss of habitat area	Percentage of loss
Fragmentation	Duration or permanence, level in relation to original extent
Disturbance	Duration or permanence, distance from site
Species population density	Timescale for replacement
Water resource	Relative change
Water quality	Relative change in key indicative chemicals and other elements

The NPWS list examples of effects that are likely to be significant:

- Any impact on an Annex I habitat
- Causing reduction in the area of the habitat or Natura 2000 site
- Causing direct or indirect damage to the physical quality of the environment (e.g. water quality and supply, soil compaction) in the Natura 2000 site
- Causing serious or ongoing disturbance to species or habitats for which the Natura 2000 site is selected (e.g. increased noise, illumination and human activity)
- Causing direct or indirect damage to the size, characteristics or reproductive ability of populations on the Natura 2000 site
- Interfering with mitigation measures put in place for other plans or projects

It is clear that the operation of the North Runway and in particular at night will lead to an increase in noise over the SPAs along the Dublin Coast.

The Birds Directive is based on applying the precautionary principle. Where doubt exists about the risk of a significant effect, an AA must be carried out. The requirement is not to prove what the impacts and effects will be, but rather to establish beyond reasonable scientific doubt that adverse effects on site integrity will not result. The safeguards set out in Article 6(3) and (4) of the Habitats Directive are triggered not by certainty but by the possibility of significant effects. Thus, in line with the precautionary principle, it is unacceptable to fail to undertake an Appropriate Assessment on the basis that it is not certain that there are significant effects.

The vantage point surveys were conducted during the daytime period. Therefore, no assessment could be made of the effects of aircraft movement over the SPAs during the nighttime period. Illumination is also a key aspect of potential effects on birds and there doesn't appear to be any mention of this in the application .

Relying on disturbance alone for birds does not capture the potential full effects of low flying aircraft on birds. One only has to look at disturbance in humans from aircraft noise. Humans do not get up and run away from aircraft noise, but rather their sleep is disturbed which can lead to detrimental effects on health. It is impossible to quantify the effects of intermittent noise on birds throughout the nighttime period just from vantage point surveys.

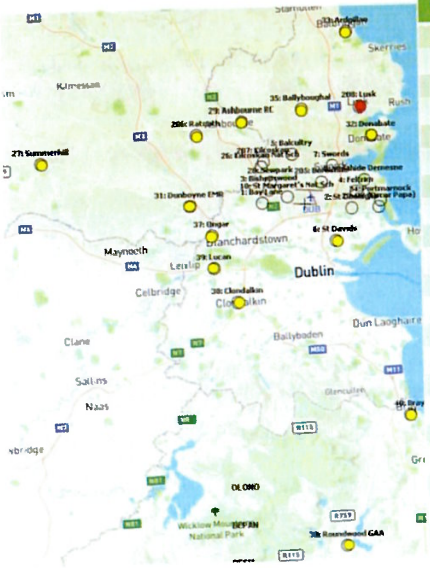
It is also worth noting that the vantage point surveys were non-breeding surveys. Obviously, the intention was not to disturb birds during the breeding season, but it is impossible to state that aircraft have no effects during the breeding season if no such surveys were carried out.

In section 5.4 it states that the number of ATMs in 2017 and 2018 was similar to that predicted under the proposed Relevant Action up to 2035. In 2018 there were 232k aircraft movements and 238k in 2019. In 2023 there were 240k movements. Therefore, movements have increased.

In section 5.5 and 5 6 the AECOM report discusses maximum noise levels at the European Sites for future scenarios. In relation to maximum noise levels, it is worth referring to the daa's noise monitoring reports. The latest for July-September is available at https://www.dublinairport.com/docs/default-source/noise-reports/noise-and-flight-track-report-july---september-2024.pdf, Below is a map of the daa's noise monitoring terminals (NMTs):

Noise Monitoring Terminal (NMT) Locations Q3 2024

DublinAirport



#	NMT Name	Since
1	Bay Lane	2015
2	St. Doolaghs	2015
3	Bishopswood	2015
4	Feltrim	2015
5	Balcultry	2015
6	St.Davids	2015
7	Swords	07/2022
8	Malahide	07/2022
10	St.Margarets N	07/2022
20	Coast Rd (OP)	2015
26	Kilcoskan NS	12/2022
27	Summerhill	09/2023
28	Newpark	09/2023
29	Ashbourne	09/2023
30	Roundwood	09/2023
31	Dunboyne	09/2023
32	Donabate	09/2023
33	Ardgillan	01/2024
34	Portmarnock	06/2024
35	Ballyboughal	06/2024
37	Ongar	08/2024
38	Clondalkin	08/2024
39	Lucan	08/2024
40	Bray	08/2024
206	Ratoath	03/2024

= Permanent NMT located near Dublin Airport

= Temporary NMT located near Dublin Airport

= Permanent NMTs located further out from Dublin Airport

= Temporary NMT located further out from Dublin Airport

#	Mobile NMT	From	Until
204	Milhead	Oct 2023	Jun 2024
205	Boroimhe	Mar 2024	July 2024
207	Kilcoscan	Jul 2024	
208	Lusk	Aug 2024	

New NMT 37-40 September only in Q3

Page 7

NMT#20 (Coast Road) and NMT #34 (Portmarnock) are perfectly positioned to monitor noise levels at Baldoyle Bay and North-West Irish Sea SPAs.

In the July-September noise monitoring report, page 14 presents the Q3 2024 LAmax Number Above (NA) for various NMTs. For the Coast Road NMT, there were 130.4 aircraft noise events per day above 70dB LAmax. For the Portmarnock NMT there were 34.5 aircraft noise events per day above 70dB LAmax. It should be noted that these figures are an underestimate as there are clearly issues with the detection of aircraft movements at the NMTs. At St Doolaghs NMT, there were 363.5 aircraft movements on average per day in Q3. St Doolaghs is under the South Runway flight path, as is the Coast Road NMT, yet the Coast Road only detected 147.1 movements. So, the movements at the Coast Road NMT could in fact be over double the figure listed on page 14.

Q3 2024 Lmax and SEL Number Above (NA) data (Daily Average)

DublinAirport

NMT	Location	Average Number of Aircraft Noise Events per DAY Above Lmax (dBA) [e.g. N60 = Number of events above Lmax 60dBA]						# Aircraft N Events / DAY	Average Number of Aircraft Noise Events per DAY Above SEL [e.g. N(SEL)70 = Number of events above SEL 70dBA]						# Aircraft N Events
		N60	N65	N70	N75	N80	N85	(Av day Q1)	N(SEL)70	N(SEL)75	N(SEL)80	N(SEL)85	N(SEL)90	N(SEL)95	(Total in Q1)
1	Bay Lane	51.0	51.0	49.5	33.3	6.5	0.1	51.1	51.0	50.9	48.5	32.0	1.8	0.0	4703
2	St. Doolaghs	363.8	363.8	342.3	151.3	3.6	0.1	363.5	363.8	361.9	331.3	70.9	2.1		33442
3	Bishopswood	200.1	200.1	156.1	52.9	2.7	0.3	200.1	200.2	196.8	142.3	30.4	1.7	0.2	18407
4	Feltrim	43.5	34.4	12.7	5.4	1.2	0.3	43.5	43.3	28.8	12.4	4.1	1.1	0.2	4003
5	Balcultry	1.0	1.0	0.7	0.4	0.2		1.1	1.0	1.0	0.6	0.4	0.0		105
6	St.Davids	2.2	2.1	1.1	0.3	0.1	0.0	2.8	2.2	2.0	0.5	0.2	0.1		256
7	Swords	1.3	1.2	0.8	0.5	0.1		1.4	1.3	1.1	0.8	0.4	0.1		131
8	Malahide	1.5	0.6	0.1	0.0			3.1	1.6	0.4	0.2	0.1			285
10	St.Margarets NS	223.5	219.0	213.5	112.8	11.5	0.2	224.4	222.7	218.6	201.1	85.7	4.8		20643
20	Coast Rd (OP)	147.2	147.2	130.4	10.7	0.5	0.0	147.1	147.2	147.2	128.8	10.1	0.1	0.0	13530
26	Kilcoske NS	229.2	226.5	212.4	119.0	10.4	0.1	229.3	228.8	226.1	212.5	114.1	9.5	0.0	21092
27	Summerhill	0.6	0.4	0.1				1.0	0.5	0.3	0.0	0.0			95
28	Newpark	227.6	227.0	202.6	152.4	19.5	0.8	227.7	227.6	217.7	199.7	152.7	14.8	0.3	20949
29	Ashbourne	9.4	8.3	2.1	0.2	0.0		9.5	9.3	6.4	1.6	0.4	0.1	0.0	870
30	Roundwood							0.0							0
31	Dunboyne	20.7	15.3	2.6	0.1	0.0		20.8	20.1	13.7	2.7	0.2			1917
32	Donabate	0.4	0.3	0.1	0.1	0.0		0.5	0.4	0.3	0.1	0.1	0.0		46
33	Ardgillan	0.2	0.2	0.1	0.0			0.3	0.2	0.1	0.0	0.0			29
34	Portmarnock	77.5	67.3	34.5	3.3	0.2	0.0	77.5	77.4	67.9	37.6	4.2	0.3	0.2	7131
35	Ball yboughal	2.8	2.8	2.8	0.5	0.0		3.0	2.8	2.8	1.7	0.2	0.0		277
206	Ratoath	64.9	47.7	7.3	0.9	0.1	0.0	64.9	62.9	47.3	7.8	0.9	0.1	0.0	5975

Including Permanent NMT installations only

Page 14

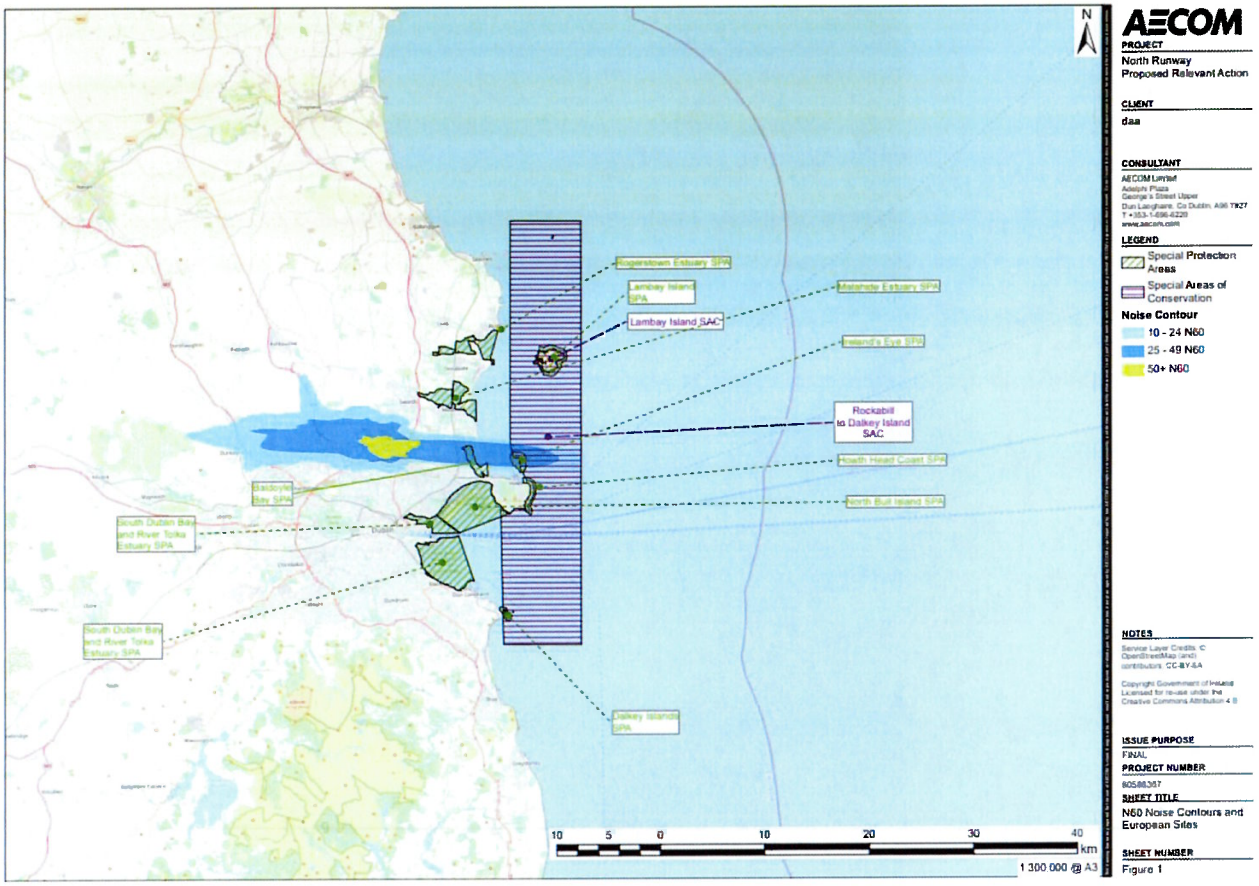
As well as having 130.4 N70 aircraft events, the Coast Road NMT also recorded 10.7 N75 events and 0.5 N80 events per day. These figures differ from the figures in Table 11 of AECOM's report. For 2025 Proposed, Table 11 has Baldoyle Bay SPA at 75dB LAmax while the daa's own monitor at Coast Road has recorded 80dB LAmax. Table 11 has just 45 events for N60, yet the daa's monitor recorded 147.2 N60 events. Table 11 has 2 N72 events versus 10.7 N75 events in the daa's noise monitoring report. Therefore, it's very clear that **Table 11 in AECOM's report is a substant id underestimation of the noise levels recorded at Baldoyle Bay SPA** .

Due to the underestimation of real noise at Baldoyle Bay SPA, it can be assumed that the noise levels at the other adjacent SPAs are also substantially underestimated.

The research by Cutts et al (2009) is highlighted in section 2 .11 and states that

> • *High level disturbance effects are likely with continuous noise above 72 dB(A) or sudden noise above 60 dB(A);*

Section 3.13 of the AECOM report references Figure 1 of the report which provides N60 noise contours based on an exceedance of 60dB LAmax at least once per night on average.

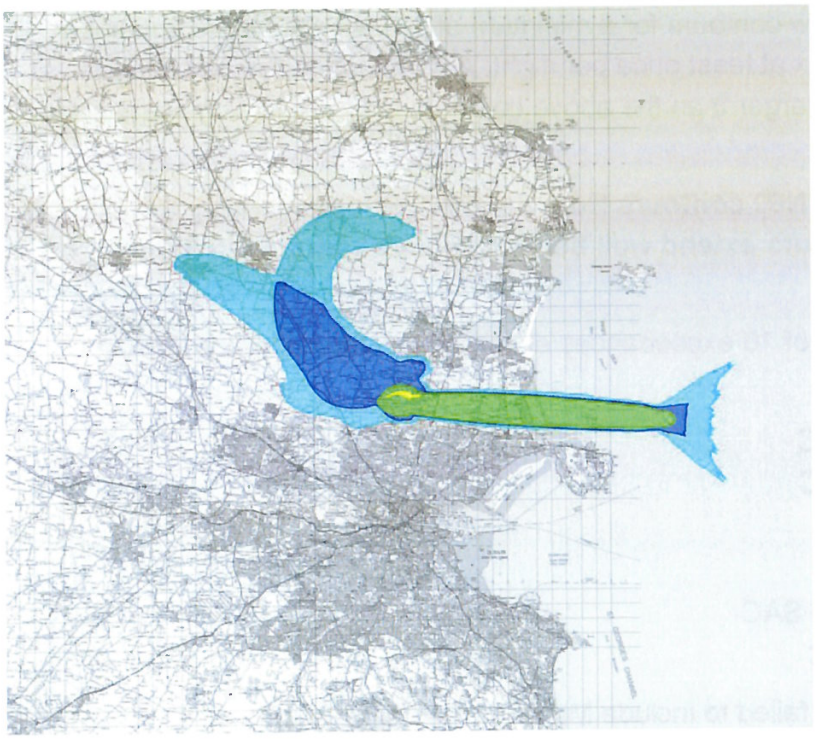


From Figure 1 it is clear that the quietest contour is based on 10-24 N60 events. Figure 1 does not show a contour for an exceedance of 60dB LAmax at least once per night

However, this map is old and has been superseded by the EIAR Supplement from September 2023. Drawing no., A11267_19_DR030_3.0 was provided in the Supplementary EIAR. It is clear that the size of the N60 contour is far larger than Figure 1 in AECOM's report.

However, the map above is based on average noise over the year with the runways operating in both easterly and westerly modes co mbined. A more accurate way of seeing the effects of the N60 contours is to study the N60 contours for easterly and westerly operations separately. The daa provided such maps in their EIAR Supplementary Report. Please refer to Drawing no., A11267_19_DR056_3.0, for westerly operations and Drawing no., A11267_19_DR055_3.0 for easterly operations.

APPROPRIATE ASSESSMENT REVIEW



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LEGEND:

- 10 - 24 N60
- 25 - 49 N60
- 50+ N60

Rev	Date	Description	Initials

REVISIONS

Bickerdike Allen Partners
Architecture Acoustics Technology

Dublin Airport
Change to Permitted Runway Operations

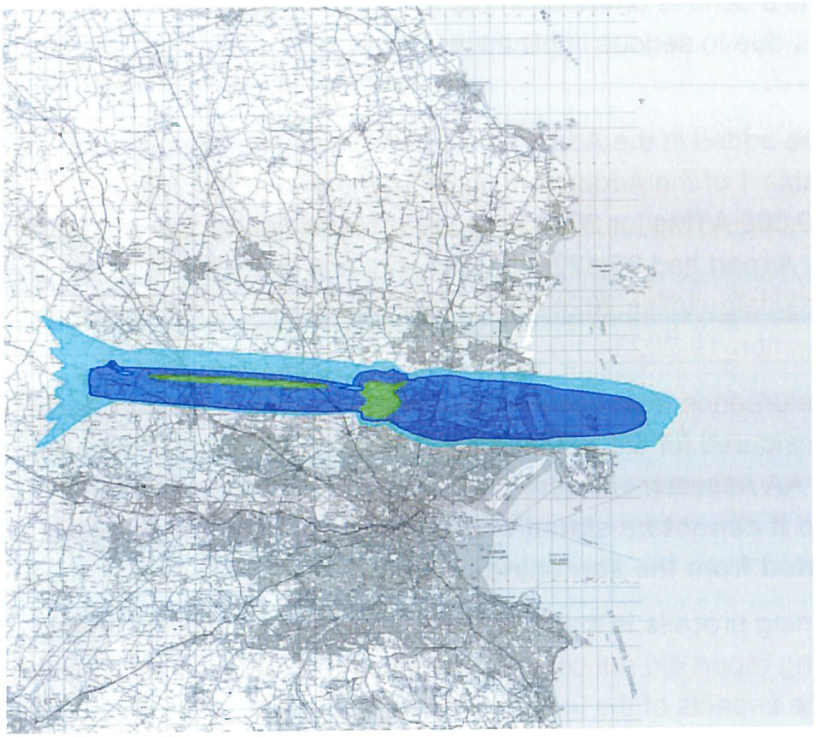
Forecast N60 Noise Contours (Westerly)
2025 Proposed Scenario
Figure 13C-40

DRAWN: JC CHECKED: KW

DATE: September 2023 SCALE: 1:250000 @ A4

Drawing No:

A11267_19_DR056_3.0



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LEGEND:

- 10 - 24 N60
- 25 - 49 N60
- 50+ N60

Rev	Date	Description	Initials

REVISIONS

Bickerdike Allen Partners
Architecture Acoustics Technology

Dublin Airport
Change to Permitted Runway Operations

Forecast N60 Noise Contours (Easterly)
2025 Proposed Scenario
Figure 13C-39

DRAWN: JC CHECKED: KW

DATE: September 2023 SCALE: 1:250000 @ A4

Drawing No

A11267_19_DR055_3.0

As stated above, these maps show contours for a minimum of 10-24 N60 events and not a single exceedance of 60dB LAmax at least once per night. A contour showing exceedance at least once per night would be far larger than the above contours in the EIAR Supplementary EIAR.

From the easterly and westerly N60 contours from the EIAR Supplementary Report, it is very evident that the N60 contours extend well beyond those illustrated in Figure 1 of AECOM's report.

The N60 contour with a minimum of 10 exceedances encompasses the following SPAs and SACs:

- Baldoyle Bay SPA and SAC
  Ireland's Eye SPA and SAC
- North-West Irish Sea SPA
- Rockabill to Dalkey SAC
- Malahide Estuary SPA and SAC
- Howth Head SPA and SAC

Table 3 in the AECOM report has failed to include Malahide Estuary SAC, Baldoyle Estuary SAC and Howth Head SAC. This is a serious omission in the AA screening process and the Board need to be made aware of it due to serious implications of failing to screen all affected European sites.

The North-West Irish Sea SPA was added in the Addendum to AA Screening Report in the Supplementary EIAR report. In Table 1 of the Addendum, it still lists the air traffic forecasts showing 32m passengers and 240,000 ATMs for 2025 Proposed. These figures were already breached in 2023. In 2023, Dublin Airport had 33.522m passengers and 240,638 ATMs (see page 5 of https://www.fingal.ie/sites/default/files/2024-09/d00001-daa-xxx-xx-xxx-p-v-xxx-0003-annual-compliance-report-section-19-2023-v1.0_0.pdf).

The addendum states that only disturbance from over-flying aircraft, collision with aircraft and emergency fuel dumping were considered for the updated AA Addendum. The other impacts listed in the NPWS Guidelines for AA Assessment were not considered and therefore the screening process is deficient, and **it cannot be stated that there are no likely significant effects when impacts were omitted from the screening process**.

A serious issue with the AA screening process is that it focused primarily on the noise effects of over-flying aircraft. The screening report did not consider other cumulative or in-combination effects of other projects or even the impacts of the increase in aircraft movements on the SPAs and SACs that are not noise related.

1.3 NPWS Guidance

The AA Guidance from the NPWS lists the following examples of effects that are likely to be significant:

- Any impact on an Annex I habitat
- Causing reduction in the area of the habitat or Natura 2000 site
- Causing direct or indirect damage to the physical quality of the environment (e.g. water quality and supply, soil compaction) in the Natura 2000 site
- Causing serious or ongoing disturbance to species or habitats for which the Natura 2000 site is selected (e.g. increased noise, illumination and human activity)
- Causing direct or indirect damage to the size, characteristics or reproductive ability of populations on the Natura 2000 site
- Interfering with mitigation measures put in place for other plans or projects

An increase in aircraft activity can lead to the potential of the degradation in air quality and water quality due to Particulate Matter emissions from aircraft. Also, an increase in aircraft activity leads to more de-icing chemicals being used on-site that can lead to pollution of the waterways on the airport campus that are hydrologically linked to the SACs and SPAs along the Dublin Coast. **Also, Dublin Airport has a serious historical PFAS contamination issue and these potential pollution risks have not been assessed in the AECOM screening report.** Section 5.1 of the AECOM report states:

> *"the only feasible impacts from the proposed Relevant Action are noise and/or visual disturbance from the over-flying aircraft, and collision risk impacts (i.e. bird strike)"*

In section 5.22 the AECOM report considers cumulative and in-combination effects. AECOM quote the OPR 2021 guidance and state that the assessment of in-combination effects must examine:

- Completed projects
- Projects which are approved but not completed
- Proposed projects (i.e. for which an application for approval or consent has been made, including refusals subject to appeal and not yet determined)
- Proposals in adopted plans; and,
- Proposals in finalised draft plans formally published or submitted for consultation or adoption.

1.4 Cumulative / In-combination projects

However, AECOM fail to list any project that could potentially affect the integrity of the European sites in a cumulative or in-combination way. The NPWS AA guidelines state in section 3.2.4 on page 33, that:

> "*As the underlying intention of the in-combination provision is to take account of cumulative effects, and as these effects often only occur over time, plans or projects that are completed, approved but uncompleted, or proposed (but not yet approved) should be considered in this context (EC, 2002). All likely sources of effects arising from the plan or project under consideration should be considered together with other sources of effects in the existing environment and any other effects likely to arise from proposed or permitted plans or projects. These include ex situ as well as in situ plans or projects. The scree nirg report should clearly state what in combination plans and projects have been considered in making the determination in relation to in combination effects.* ***Simply stating that "there are no cumulative impacts" is insufficient***".

The AECOM report has clearly failed in this regard. No plans or projects have been considered in relation to in combination effects. AECOM provide the following rationale in section 5.24:

> "*However, no possible effects were identified for the impacts which could theoretically arise from the proposed Relevant Action. Where there is no possibility of any effect (as opposed to a small but insignificant effect), there cannot be any in-combination effect with other projects or plans as there will be no addition from the proposed Relevant Action.*"

This a flawed conclusion to draw. Firstly, there are possibilities of effects due to the Relevant Action and secondly it can be the in-combination of other plans and projects that lead to effects.

Under the EU Birds Directive (Directive 2009/147/EC) and Habitats Directive (Directive 92/43/EEC), a nAppropriate Assessment (AA) is required when a plan or project is likely to have a significant effect on a Natura 2000 site, either alone or in combination with other plans or projects. If a project, plan, or program on its own has no significant impact on a Natura 2000 site, there is still an obligation to assess in-combination effects with other projects, plans, or programs.
This requirement arises because small, individually insignificant impacts from multiple sources may together result in significant adverse effects on the integrity of a Natura 2000 site.

The obligation to consider cumulative effects is enshrined in Article 6(3) of the Habitats Directive ,which specifies that an appropriate assessment must consider any plan or project in

combination with others that might have a significant impact.

EU case law, including the landmark judgment in the "Waddenzee case" (C-127/02), emphasizes the precautionary principle. This means that if there is any doubt or risk of cumulative effects, an in-combination assessment is required.

Failure to conduct a cumulative or in-combination assessment is a breach of Article 6(3) of the Habitats Directive. Risk to Environmental Integrity could be caused by not addressing cumulative impacts; authorities may inadvertently allow incremental damage to a Natura 2000 site, which is contrary to the conservation objectives of the Birds and Habitats Directives.

If a cumulative assessment is not carried out, the approval of the plan or project could be declared invalid under EU law.

The "*Managing Natura 2000 sites*" guidance, https://op.europa.eu/en/publication-detail/-/publication/11e4ee91-2a8a-11e9-8d04-01aa75ed71a1/language-en, from the European Commission provides clear instructions on the need for and methodology of in-combination assessments. It highlights:

- Identifying all relevant plans and projects that could interact with the one being assessed.
- Considering both completed projects and those still in planning or approval stages.
- Assessing the cumulative impacts on the conservation objectives of the Natura 2000 site.

So, even if a plan, program, or project has no direct impacts on its own, an in-combination assessment is mandatory to ensure compliance with the Birds and Habitats Directives. Failing to carry out such an assessment would violate EU law. To ensure compliance, it is essential to conduct a thorough cumulative impact analysis, following the precautionary principle and EU guidance.

The EU guidance states in section 4.5.3:

> "*A series of individually modest impacts may, in combination, produce a significant impact. As the Court has pointed out 'the failure to take account of the cumulative effect of projects in practice leads to a situation where all projects of a certain type may escape the obligation to carry out an assessment, whereas, taken together, they are likely to have significant effects on the environment' (C-418/04, C-392/96 paragraphs 76, 82)*".

It goes on further to say:

> *"a plan may have no significant impact on Natura 2000 sites on its own but may be assessed differently if considered in combination with an already proposed or authorised major development project not included in that plan".*

It also states:

> *"When **determining** likely significant effects, the combination with other plans and/or projects should also be considered to take account of cumulative impacts during the assessment of the plan or project in question. The in-combination provision concerns other plans or projects which have been already completed, approved but uncompleted or actually proposed."*

Non-significant effects on their own may be assessed differently in combination with other plans or projects. **This implies that you cannot determine if there are likely Significant effects UNTIL you do the cumulative / in combination assessments. This has clearly not been done by AECOM and ANCA and therefore both assessments are in breach of Article 6(3).**

Dublin Airport has a long list of projects that are newly completed, underway or in the planning phase but yet these have been completely ignored in this screening process. One major project which is in the planning process is planning application F23A/0781. This application involves the increase in passenger numbers using the airport from 32m to 40m. It also involves an extensive list of infrastructure projects and in their entirety is one of the largest projects undertaken in the State. The increase in passenger numbers to 40m requires the Relevant Action and therefore the Relevant Action facilitates this project and is an enabler project to achieve this increase. This Infrastructure project will lead to more aircraft movements and more over-flights of the European sites, leading to an increase in noise and an increase in the N60 contours. The associated infrastructure works involve major construction projects including an underpass of the cross runway and works to the aprons. There is also a major drainage application that is before the Board, F23A/0636. This project involves major construction works also and all these construction projects have the ability to release PFAS and other pollutants into the streams and rivers around the airport that are hydrologically linked to the European sites. Therefore, there can be no dispute that these projects need to be considered and assessed as a whole and the implications of each on each other. AECOM have failed to even list a single project and give the reason why each project is considered not relevant. This again is a serious flaw in the application and one that the Inspector must inform the Board about.

APPROPRIATE ASSESSMENT REVIEW

The OPR guidance asks a simple question in relation to AA screening:

> "*Is the project likely to have a significant effect, either individually or incombination with other plans or projects, on European site(s) in view of the site's conservation objectives?*"

The Board's ecologist states in her report in section 2.2.14 that:

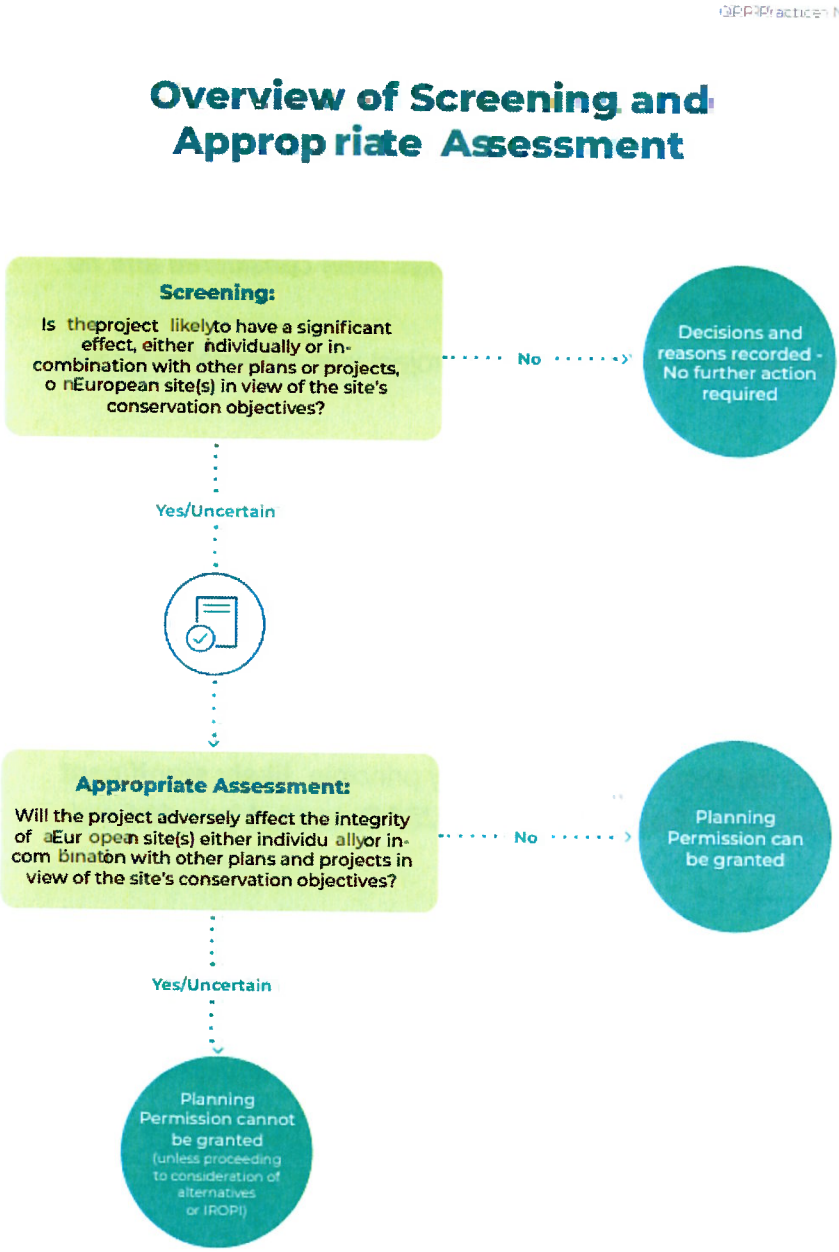
> "*In combination effects with other plans and projects has been considered and no significant in combination effects are likely to occur*".

This is an extraordinary comment to make. Not one single project was considered by the AECOM report.

It is very clear from the latest noise monitoring from the daa in their noise monitoring reports and the N60 easterly and westerly contours in their EIAR Supplementary Report and the in-combination effects of other projects such as F23A/0781 and F23A/0636, that there's potential to have both individual and in combination significant effects on the conservation objectives of European sites.

Therefore, a full AA Assessment must be carried out.

The conclusion stated in section 5.26 of the AECOM report is incorrect. Based on the daa's own noise monitoring reports and applying the precautionary principle, **likely significant effects on the SPAs, and in particular Baldoyle Bay SPA/SAC, cannot be ruled out.**



In section 2.2.10 the Board's ecologist states that the daa's Screening report is focused only on the noise impacts and visual disturbance from over-flying aircraft and collision risk impacts.

The Board's ecologist then goes on to say in section 2.2.11 that she is satisfied that the Inspector and the Board have adequate information which conforms to the requirement being objective and of best scientific knowledge, upon which to base the screening determination.

The information provided above, some of which was presented in previous submissions, has clearly not been looked at by the Board's ecologist. She has accepted the information from the daa without any scrutiny and knowledge contained within the appeals. Above we have presented noise information that clearly shows that noise at the European sites is far greater than presented by the daa. AECOM's Literature Review only lists publications which promote their views. They fail to list and discuss the 3 publications mentioned in the EEA's State of the Environment report. The AECOM report also fails to take into account other risk factors on the European sites and fails to consider cumulative and in-combination projects. The bird surveys are long out of date, and this should have been flagged immediately by the Board's ecologist as it fails the basic criteria laid down by the CIEEM in their Advice Note, '*On the Lifespan of Ecological Reports & Surveys*'. The AECOM report is incomplete, out of date and inaccurate and these issues were not raised by the Board's ecologist. **These issues must be raised to the Board as the lack of scrutiny by the Board's ecologist leaves the Board open to Judicial Review.**

1.5 Conservation Objectives

Baldoyle Bay SPA:

The Qualifying Interests of Baldoyle Bay SPAare as follows:

Qualifying Interests	
* indicates a priority habitat underthe Habitats Directive	
004016	Baldoyle Bay SPA
A046	Brent Goose *Branta bernicla hrota*
A048	Shelduck *Tadorna tadoma*
A137	Ringed Plover *Charadrius hiaticula*
A140	Golden Plover *Pluvialisapricaria*
A141	Grey Plover *Pluvialis squatarola*
A157	Bar-tailedGodwit *Limosa lapponica*
A999	Wetlands

The Baldoyle Bay SPA conservation objectives supporting document, https://www.npws.ie/sites/default/files/publications/pdf/004016_Baldoyle%20Bay%20SPA%20Supporting%20Doc_V1.pdf, lists the site's population trends for waterbirds:

Table 4.2 Site Population Trends for waterbird Special Conservation Interest species of Baldoyle Bay SPA

Site Special Conservation Interests (SCIs)	Site Population Trend[1] 12 Yr	Site Population Trend[2] 5 Yr
Light-bellied Brent Geese*	+ 43.7	+ 30.0
RingedPlover*	- 7.3	- 4.3
Bar-tailed Godwit*	- 52.8	- 70.4
Shelduck	+ 141.5	+ 118.1
Golden Plover	- 37.7	- 1.6
Grey Plover	- 49.3	- 53.6

* denotes site selection species; [1]Site population trend analysis: 12 yr = 1995/96 – 2007/08; [2]Site population trend analysis: 5 yr = 2002/03 – 2007/08.

A site's conservation conditio nis determined using the long-term site population trend and assigned using the following criteria:

- Favourable population = population is stable/increasing
- Intermediate (unfavourable) = Population decline in the range 1.0 – 24.9%
- Unfavourable population = populations that have declined between 25.0 – 49.9% from the baseline reference value

- Highly Unfavourable population = populations that have declined > 50.0% from the baseline reference value

For the 6 waterbird species of Special Conservation Interest, based on the long-term population trend:

- Bar-tailed Godwit is currently considered as **Highly Unfavourable**
- Golden Plover & Grey Plover are currently considered as **Unfavourable**
- Ringed Plover is currently considered as **Intermediate Unfavourable**
- Light-bellied Brent Geese & Shelduck are currently considered as Favourable

The supporting document also compares the site's trends to the Island of Ireland and International trends for the waterbirds of interest:

Table 4.3 SCI species of Baldoyle Bay SPA – Current Site Conservation Condition

Special Conservation Interests	BoCCI Category[a]	Site Population Trend[b]	Site Conservation Condition	Current all-Ireland Trend[c]	Current International Trend[d]
Light-bellied Brent Geese*	Amber	+ 43.7	Favourable	+ 58	Increase
Ringed Plover*	Amber	- 7.3	Intermediate (Unfavourable)	+ 21.8	Decline
Bar-tailed Godwit*	Amber	- 52.8	Highly Unfavourable	+ 1.5	Stable
Shelduck	Amber	+ 141.5	Favourable	+ 4.46	Stable
Golden Plover	Red	- 37.7	Unfavourable	- 2.2	Decline
Grey Plover	Amber	- 49.3	Unfavourable	- 33.1	Decline

* denotes site selection species.
[a]After Lynas *et al.* (2007); [b] Site population trend analysis; see Table 4.2; [c]all-Ireland trend calculated for period 1994/95 to 2008/09; [d]international trend after Wetland International (2006).

> "*The pink and red categories highlight where populations are stable at all-Ireland level, but where significant declines are seen at site level. In these cases* ***it would be reasonable to suggest that site-based management issues may be responsible for the observed declining site population trends*** *(Leech et al. 2002).*"

From the above it's evident that the Baldoyle Bay SPA is failing compared to an All-Ireland level and therefore all efforts should be made based on the precautionary principle to maintain its conservation objectives.

1.6 ANCA Reports

In ANCA's Appropriate Assessment Determination, https://www.fingal.ie/sites/default/files/2022-08/AA%20Determination.pdf, dated June 20th 2022, it states that their AA Screening Report identified the following possible effects on European sites which could arise as a result of noise management measures necessary to meet the requirements of the NAO and Regulatory Decision:

> • *The effects of increases in the level and frequency of noise, and visual disturbance events caused by increases in aircraft overflying of European sites and potentially, also by this overflying occurring at differing times of the day and night;*
>
> • *The effects of changes to air quality, particularly increases in the concentrations of NOx and levels of nitrogen deposition, caused by increased numbers of aircraft overflying European sites; and*
>
> • *The effect of emergency fuel dumping from overflying aircraft affecting European sites directly, or indirectly through surface water pathways.*

One important point that the Board's ecologist fails to highlight in section 2.3 of her report is that in section 3.4 of ANCA's AA Natura Impact Statement, https://www.fingal.ie/sites/default/files/2022-08/AA%20Natura%20Impact%20Statement.pdf, it states:

> *"Given the above, and that ANCA's remit is confined to aircraft noise (as revealed in Chapters 1 and 2), this AA deals only with the direct and indirect impacts relating to the management of aircraft noise."*

This statement makes it very clear that **ANCA's AA only deals with the direct and indirect impacts of the management of aircraft noise**. Therefore, ANCA's AA is a very limited AA and doesn't deal with non-aircraft noise related impacts on European sites. This is extremely important as the Board cannot rely on ANCA's AA NIS as a full AA assessment. ANCA's AA does not satisfy the NPWS and OPR guidelines on AA Screening and Assessment. The Board should be made aware of the limitations in ANCA's AA assessment.

In section 3.24 of ANCA's NIS, reference is made to the research by Cutts et al and the refined guidance in the Waterbird Disturbance Mitigation Toolkit.

- *high level disturbance effects are likely with continuous noise above 72 dB or sudden noise above 60 dB;*
- *moderate level disturbance effects are likely with regular noise of 60 – 72 dB or sudden noise of 55 – 60 dB; and,*
- *there is unlikely to be any response by waterbirds to any noises below 55 dB*

In section 3.26 of the NIS, it states that it considers the thresholds for 'continuous' noise as being most relevant and representative of aircraft noise. This is a serious fatal flaw in the NIS. The Board's Noise Expert, Mr Fiumicelli, goes to great lengths to include research on awakenings and limiting additional awakenings due to aircraft noise to less than one per night. Awakenings are based on single noise events and not continuous noise. It's the single noise event that leads to awakenings and not average continuous noise.

In ANCA's AA Screening Determination report, https://www.fingal.ie/sites/default/files/2021-08/20210818-anca-012-2021-aa-screening-determination-.pdf, it states in section 4.7 that:

> *"it cannot be ruled out at this stage that there may be projects occurring, or likely to occur, that could have effects that act in combination with proposals made in the NAO and RD. For this reason, in combination with the NAO and RD, the potential for other relevant projects to cause environmental effects will be considered at the Appropriate Assessment stage".*

However, in section 3.7 ANCA's NIS it states:

> *"The AA Screening Report considered whether there was any potential for the NAO and RD to have effect on Natura 2000 sites in combination with other Plans (listed in this Report, paragraph 2.16) that outline policies, promote growth or propose changes in operations at the Airport. It concluded that the proposals within the NAO and RD will be complementary to and in accordance with those other Plans, and so therefore not in any way additional. It also stated that there are no known projects occurring or in development that are contrary to or additional, to the Plans set out, and this remains the case."*

And in section 3.8:

> *"For these reasons, the Screening Report concluded that there was no further need to consider the potential for increased effects as a result of the NAO and RD acting in combination with the effects of other projects or plans, within a detailed Appropriate Assessment. In-combination effects of the implementation of the NAO and RD with other Plans are therefore not considered further."*

The AA Screening Report clearly stated that the in-combination effects of projects that could have effects cannot be ruled out and would be considered at the full AA assessment stage. But the NIS has misinterpreted the AA Screening Report and appears to mix up plans and projects. Regardless, the in-combination effects of projects that could cause effects have never been assessed and is a major deficiency in the AA process. Article 6(3) is very clear that any plan or project likely to have a significant effect on a European site either individually or in combination with other plans or **projects** shall be subject to Appropriate Assessment.

Box 1: Full text of Article 6(3) and 6(4) of the Habitats Directive

6(3)– Any **plan or project** not **directly connected with or necessary to the management of the site** but **likely to have a significant effect thereon**, either individually or in combination with other plans or projects, shall be subject to **appropriate assessment** of its implications for the site in view of the site's **conservation objectives**. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the **competent national authorities** shall agree to the plan or project only after having ascertained that it will not adversely affect the **integrity of the site** concerned and, if appropriate, after having obtained the opinion of the general public.

In combination projects have not been assessed by the applicant or ANCA and therefore the Regulatory Decision is in breach of Article 6(3). The Board must be made aware of this and the fact that the Board's ecologist also missed this major point.

1.7 AA Screening by Planning Authority

AA Screening was carried out by Brady Shipman Martin on behalf of the Planning Authority. Their report is dated August 2022.

In the report it states:

> *"As requested in the RFI the potential in-combination effects were also reviewed in the revised AA Screening Report."*

Brady Shipman Martin have made the same mistake and failed to realise that the in-combination effects were never assessed. No other projects were considered. They have failed to understand the meaning of Article 6(3) and in-combination effects. It is not sufficient to just state there are no effects. This report is dated August 2022 and since then the daa have submitted their Infrastructure Application (F23A/0781) and drainage application (F23A/0636) amongst many other planning applications. These two applications in particular have the potential to inflict Significant effects on the European Sites in-combination with the Relevant Action. The Relevant Action is required for the daa to achieve its growth predictions and therefore it facilitates the achievement of 40m passengers per year. Therefore, it's imperative that any AA Screening should take future passenger numbers into account.

Brady Shipman Martin quote the AA Screening report that below 500m there were no significant impacts of disturbance. It is worrying that Brady Shipman Martin didn't take the opportunity to ascertain the altitude that aircraft fly over the European sites. Baldoyle Bay SPA, for example, is under the flight path for arrivals from the east on the South Runway. 70% of all arrivals at Dublin Airport arrive in over Baldoyle Bay. For the other 30% of the time, the aircraft are departing over Baldoyle Bay.

From the daa's noise monitoring report from July-September 2023, https://www.dublinairport.com/docs/default-source/noise-reports/noise-monitoring-report-july-september-2023.pdf, Table 14 shows the noise captured at NMT #20 beside Baldoyle Bay:

Ta ble 1 4shows the top 10 loudestcorrelated aircrafttypes from the total count of co rrelated noise events to N MT20.

Aircraft Type	Max dB	Total Count
HAWK	90	2
B744	80	1
A400	79	2
C130	78.8	1
P80	77.6	2
P180	771	6
B77W	76.9	465
B 764	76.8	188
A332	76 .2	64 0
A333	76	1782

Ta ble 14 LAmax by aircraft typescorrelated to NMT 20, July -- Decembe 2023

This shows there were over 3,000 movements greater than 76dB LAmax adjacent to Baldoyle Bay SPA.

Brady Shipman Martin refer to the ornithological field surveys undertaken at Baldoyle Bay SPA and Rogerstown Estuary SPA i n2016, 2017 and 2 018 .Surprisingly, Brady Shipman Martin make no reference to the age of these reports and the guidance from the CIEEM.

It is worth noting that the Brady Shipman Martin report was dated August 2022 when the North Runway opened. They failed to acknowledge that no surveys were undertaken of aircraft movements from the North Runway. The North Runway is used during maintenance periods at night on a frequent basis.

Brady Shipman Martin discuss noise levels and state:

> *"However, the results do indicate a number of incidents of reduction in noise levels and increase in the 60 dB(A) noise at different sites. However, the number of incidents are very small and with 2 exceptions at Baldoyle Bay SPA, none of these incidents exceed 72 dB(A) and none exceed 77 dB(A)."*

The table above shows over 3,000 movements greater than 76dB LAmax between July-September 2023. The noise figures referenced by Brady Shipman Martin are out of date and not reflective of the real noise levels.

It is also worth highlighting that Brady Shipman Martin make no reference to third party submissions and therefore have relied solely on the submissions by the applicant and ANCA. **One must ask the question what the purpose of public consultation is in the planning process when submissions from the public are effectively ignored. This is in contravention of the Aarhus Convention which sets out rules to promote public participation and access to justice on environmental issues.**

1.8 Collision Impact

In 2022 it was reported by RTE that the IAA stated that aircraft bird strikes was a growing problem - https://www.rte.ie/news/2022/0620/1305887-bird-strikes-iaa/. In the IAA"s review of aviation safety performance in 2021 it was reported that there were 1379 bird strikes in the period 2020-2021, making it the 2nd biggest safety concern:

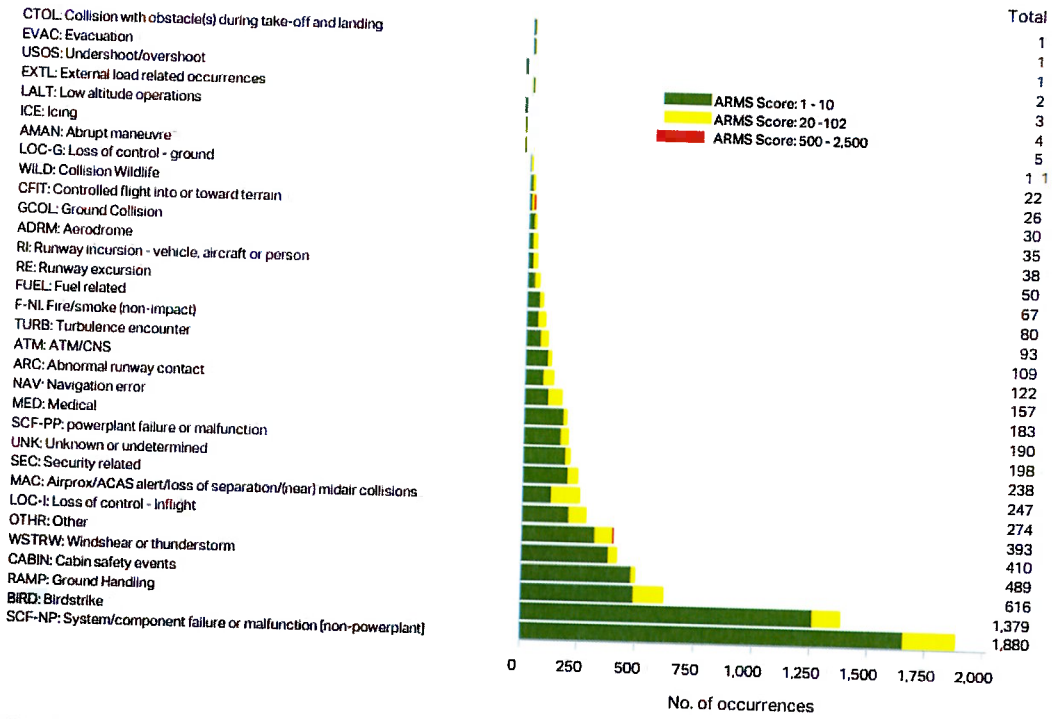


Figure B.2.(b) Categorisation of MORs Involving Irish CAT Aeroplanes during 2020 -2021

There were 1823 bird strikes logged for the period 2017-2019.

The Birds Directive places an overarching obligation on Member States to take whatever measures that are necessary to maintain or restore their populations at a level which corresponds in particular to their ecological, scientific and cultural requirements. It places an obligation to protect habitats and Article 5 involves the protection of the species themselves by banning the deliberate disturbance, killing, capture or trade of wild birds and destruction of their nests.

1.9 Red Kite

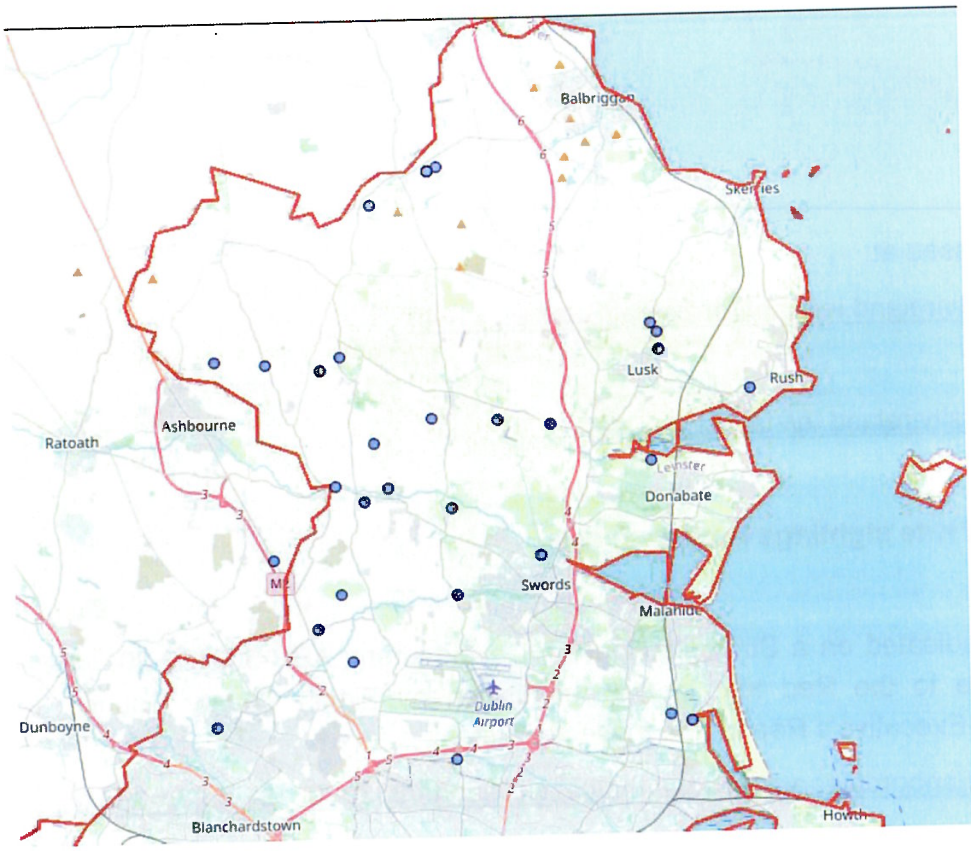
The Red Kite has been reintroduced to parts of Ireland:

https://www.irishtimes.com/news/environment/red-kite-chicks-bred-in-fingal-for-first-time-in-100-years-1.2780462

This programme has been led by the Golden Eagle Trust and the NPWS. One of the sites chosen was Newbridge House in Donabate. The Red Kite (Milvus milvus), is a bird of prey listed on Annex 1 of the EU Birds Directive (79/409/EEC) and protected under the Wildlife Act 1976, as amended.

There has been no assessment of the proposed development on the status of the Red Kite which has been reintroduced into Fingal in recent years. The revised AA Screening report addendum makes no reference to the Red Kite which is a serious dereliction of AA requirements.

Below is a map from 2010 showing Red Kite sightings in Fingal:



Here is a map showing the most recent sightings:

This data can be accessed at:

https://maps.biodiversityireland.ie/Map/Terrestrial/Species/11445

and

https://records.biodiversityireland.ie/stats/taxon-stats

The difference in Red Kite sightings is clear to see.

An Bord Pleanála adjudicated on a Strategic Housing Development, ABP-306182-20, where references were made to the Red Kite in the submission by Fingal County Council. In summarising the Chief Executive's Report, the Inspector states:

https://www.pleanala.ie/anbordpleanala/media/abp/cases/reports/306/r306182.pdf?r=388447327107

> *"Concerns are expressed at the potential loss of trees. In addition, the loss of trees will lead to a reduction in habitat for the Red Kite, which are known to nest in area."*

And in the conclusion:

> *"The planning authority recommend that permission is refused for four reasons: proposed development is out of scale when compared to the existing village and contrary to national, regional and local guidance; design is out of character with the RV zoning, the Village Design Framework Plan and objective RF17 of the County Development Plan; the configuration of open space is poorly designed and the loss of trees and hedgerows is excessive;* ***the impact of the development to the Red Kite (an Annex 1 species)*** *and impact on known bat roosts due to the loss of trees and hedgerows is contrary to Development Plan conservation objectives."*

It is worth highlighting that the applicant in this case prepared a 'Red Kite Impact Assessment' as an addendum to the Ecological Impact Assessment.

Of particular note also is that Article 4(4) of the EU Birds Directive (Directive 2009/147/EC) requires that even outside of SPAs, Member States shall strive to avoid pollution or deterioration of habitats of these birds:

> *"In respect of the protection areas referred to in paragraphs 1 and 2, Member States shall take appropriate steps to avoid pollution or deterioration of habitats or any disturbances affecting the* ***birds, in so far as these would be significant having regard to the objectives of this Article. Outside these protection areas, Member States shall also strive to avoid pollution or deterioration of habitats.***"

There is no reference to the Red Kite in this application which is of serious concern, and no attempt to assess the impact that this development would have on the Red Kite, nor any attempt to avoid a deterioration of their habitat, in clear violation of the Birds Directive.

1.10 NoAA forNorth RunwayDevelopment

The Relevant Action application is to amend conditions from a previous grant of planning, F04A/1755. F04A/1755 was appealed to An Bord Pleanála under PL06F.217429 and extended under F04A/1755/E1. At no point during any of this North Runway planning stage / appeal / consent of the applicatio nwas an Appropriate Assessment carried out in relation to the application. None. When commenting on the extension application heritage officer for Fingal County Council, Gerry Clabby in January 2017, referred to section 42(1)(a)(ii)(IV) (we presume of the Planning and Development act of 2000) to state that an updated EIA and an AA were not required. This was contrary to the Birds Directive and Habitats Directive under EU primary law as entered into force at EU level. The Irish Government had failed to transpose it into National law until 7 months later with S.I. No. 342 of 2017 PLANNING AND DEVELOPMENT (AMENDMENT) REGULATIONS 2017. In a subsequent court case Merriman v Fingal County Council and others, Barret J did not overturn the extension permission. This leaves us with an amendment to a grant of planning in 2022, which is based on an EIS that is informed by surveys and information only up to 2005 and no Appropriate Assessment since 2005 on a massive planning development.

Happily, the Merriman judgment has been overtaken by Friends of the Irish Environment V An Bord Pleanála 2018 No. 734 J.R. and Court of Justice judgment C 254/19 which found that an extension to a permission was a project as defined under the EIA Directive and that definition was applicable to the Habitats Directive. In the CJEU decision which the High Court used to quash the extension to original grant of planning, the court found:

- That account should be taken of any assessments carried out for earlier consents, this avoids the same project being subject to several environmental assessments, but by doing so can't rule out the risk that the consent will have significant effects on the Natura 2000 site. In this case no earlier assessment was car ied out and so must now be carried out on the entirety of the development subject to the original planning, extension of planning and now the amendment of planning with the Relevant Action.

- That any assessments shall contain complete, precise and definitive conclusions capable of removing all reasonable scientific doubt as to the effects of the works; and provided that there are no changes in the relevant environmental and scientific data, and no changes to the project and no other plans and projects to be taken into account. As assessments or conclusions have never been carried out and since grant of planning in 2007 there have been multiple changes in cumulative impacts, regulatory and legislative regime, impacts on environment, then these must now be addressed with this planning application AND in this separate noise Regulatory Decision.

APPROPRIATE ASSESSMENT REVIEW

In the Shannon LNG case (as with this extension permission currently under amendment) The original consent was not preceded by an assessment under article 6(3). Therefore it can't be ruled out that such a project might have a significant effect on the Natura 2000 sites, and that such considerations are such, as to require a consent to be preceded by an Appropriate Assessment, such an assessment can't be a simple update of the assessment that may have been carried out previously – it must consist of a FULL assessment of the implications of the entire project.

This was summarised in paragraph 59 which stated:

> *"It is for the competent authority to assess whether a decision extending the period originally set for carrying out a project… the original consent for which has lapsed, must be preceded by an appropriate assessment….and if so, whether that assessment must relate to the entire project or part thereof, taking into account, inter alia, previous assessments that may have been carried out and changes in the relevant environmental and scientific data as well as any changes to the project and existence of other plans or projects…. A previous assessment of that project, carried out before the original consent for the project was granted, cannot rule out that risk unless it contains full, precise and definitive conclusions capable of removing all scientific doubt as to the effects of the works, and provided that there are no changes in the relevant environmental and scientific data, no changes to the project and no other plans or projects."*

As it is clear that no Appropriate Assessment has ever been carried out for any part of the North Runway project, it would be impossible for the current NIS(s) in relation to both the Planning application and the Regulatory Decision to be considered sufficient, as it only considers the impacts from the amendment of the conditions. Also, ANCA clearly stated that their assessment was focused on noise impacts only. As no AA has ever been carried out all potential impacts from the development since 2006 and any cumulative impacts with other developments granted since then must be assessed in order for a legal and valid Appropriate Assessment to be completed both by ANCA and by Fingal County Council.

I.I I B reachesof planning conditions

It must be noted that the applicant has breached planni rg conditions i nrelation to number of night movements in excess of that permitted under condition 5 and in relation to the permitted flight paths/ tracks that were assessed in the original EIS and informed the making of multiple development plans in relation to spatial planning and t heidentificati onof public safety zones and policy on public safety zones which are also adopted in the current Fingal Development plan.

In fact, the applicant as voting members of the Dublin Airport slot co-ordination committee have knowingly and wilfully and with full knowledge of their legal obligations, decided to potentially breach planning and environmental regulations in relation to the operating conditions included in this application, which are attached to the grant of the parent planning permission for the North Runway. They have done so after full discussions and risk assessments, when deciding coordination parameters for Summer 2023/Winter 2023 and Summer 2024 slots some months in advance of the slot periods. These conditions that the slot decisions assessed and decided to contravene are:

3(d) of the North Runway Planning Permission (Fingal County Council Reg .Ref. No. F04A/1755; ABP Ref. No.: PL06F.217429 as amended by Fingal County Council F19A/0023, ABP Ref. No. ABP-305289-19). Condition 3(d) and the exceptions at the end of Condition 3 state the following:

> *3(d). Runway 10L-28R shall not be used for take-off or landing between 2300 hours and 0700 hours except in cases of safety, maintenance considerations, exceptional air traffic conditions, adverse weather, technical faults in air traffic control systems or declared emergencies at other airports.'*

Condition no. 5 of the North Runway Planning Permission (Fingal County Council Reg. Ref. No. F04A/1755; ABP Ref. No.: PL06F.217429 as amended by Fingal County Council F19A/0023, ABP Ref. No. ABP-305289-19) which provides as follows:

> *On completion of construction of the runway hereby permitted, the average number of night time aircraft movements at the airport shall not exceed 65/night (between 2300 hours and 0700 hours) when measured over the 92-day modelling period as set out in the reply to the further information request received by An Bord Pleanála on the 5th day of March, 2007. Reason: To control the frequency of night flights at the airport so as to protect residential amenity having regard to the information submitted concerning future night time use of the existing parallel runway'*

The net effect of the slots' decisions, is, if and when they were implemented, constituted a potential intentional breach of the planning permission operating conditions. This fact, that the

committee including the applicant may have acted with intent to breach Planning conditions, will not sit well with the Courts. The Courts expect parties to have "clean hands" / not to have partaken in unfair conduct. Actively assessing the risk of adhering to planning conditions 3(b) and 5, when deciding the slot S23 parameters and voting to potentially breach them anyway in favour of economic market concerns, then carrying those decisions through to W23 and this decision S23 raises the legal violation of "the clean hands doctrine". An Bord Pleanála as a quasi-judicial body must also comply with legislation under section 34(12) of the planning act in relation to unauthorised development and whether the breach was carried out in a deliberate manner, which could be supported by the slot co-ordination decisions.

As the IAA and the slot co-ordination committee have failed to comply with the sustainable planning conditions put in place by ABP in 2007, it falls to the Board to find that the applicant cannot benefit from a breach of planning consent and that the current application should be refused on the basis that no AA was ever carried out on the parent permission in contravention of the Habitats and Birds Directives. In previous submissions we have made a detailed case for the invocation of section 34(12) to refuse to accept this planning application as under the current laws it cannot be regularised.

The Board have a statutory duty to ensure that EU law is applied in its fullest iteration, in its decision-making process. On some planning consents the applicant has carried out screening, submitted an NIS but only for piecemeal development and never has it even attempted to carry out a robust EIA and AA of the entire Airport campus.

This position is no longer tenable and must be corrected. The cumulative impacts of the Dublin Airport Campus on our NATURA 2000 Network must be assessed. This can also be applied to a master EIAR. Legal precedent would be case C-392/96 which states:

> *"The purpose of the EIA Directive cannot be circumvented by the splitting of projects and the failure to take account of the cumulative effect of several projects must not mean in practice that they all escape the obligation to carry out an assessment when, taken together, they are likely to have significant effects on the environment within the meaning of Article 2(1) of the EIA Directive."(C-392/96, Commission v. Ireland, paragraphs, 76, 82; C-142/07, Ecologists en AcciónCODA, paragraph 44 ; C-205/08, Umweltanwalt von Kärnten, paragraph 53; Abraham and Others, paragraph 27; C-275/09, Brussels Hoofdstedelijk Gewest and Others, paragraph 36)*

The problem that is frequently encountered in planning applications is that of carrying out an AA on a development and having a finding of no significant effect. Then incorrectly carrying out a cumulative impact assessment by concluding because each development in isolation had a finding of no significant effect then cumulatively there could be no significant effects. This

method is manifestly wrong. All effects identified within each development no matter how significant must be assessed in a cumulative matrix.

The info -graphic below gives a visual representation of the correct and incorrect methods of cumulative assessment to be used in AA and EIA assessments.

Taking the correct methodology into consideration we can safely conclude that as previous AA and EIAR did not apply the correct methodology a robust AA and EIA is now requir ed.Based on an initial examination of airport planning consents it is clear that AA and EIA assessments were not always carried out on new development applications.

The South Runway was built in advance of the implementation of the Habitats Directive as was the old airport building but their current uses and impact on NATURA 2000 sites should be included in cumulative impact assessments.

In addition to the compliance issues identified earlier, the daa is not in compliance with condition 10 of the parent permission as Fingal County Council have deemed their compliance submission unacceptable and not as per the requirements of the condition. This condition directly impacts on the ability of ABP to assess this amendment application in relation to aircraft noise, mitigation and compliance with the NAO.

Figure 1: Incorrect method of cumulative assessment.

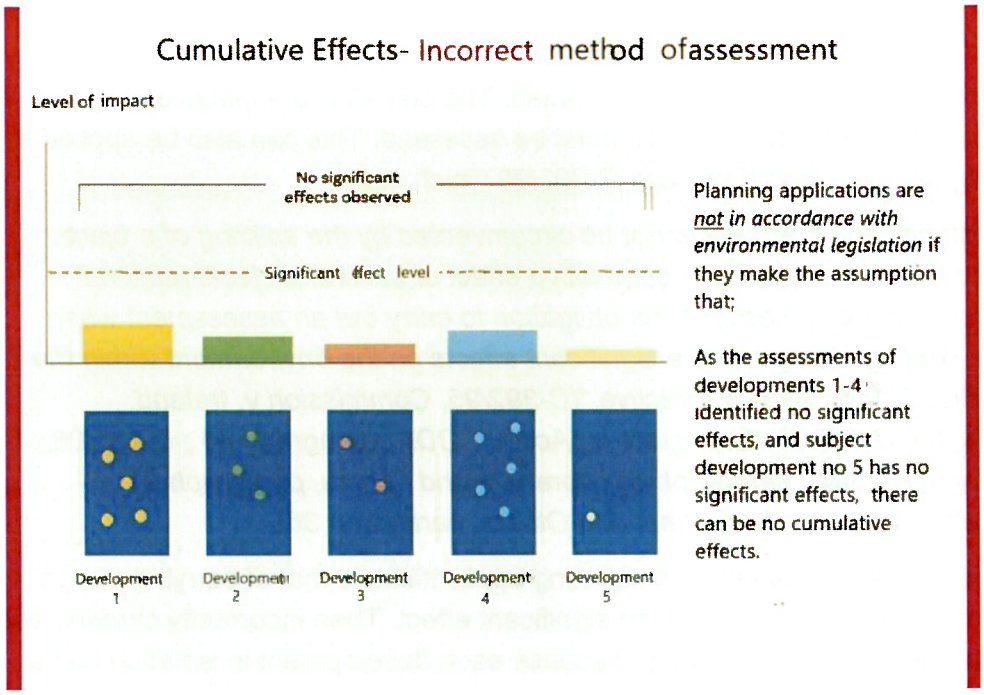
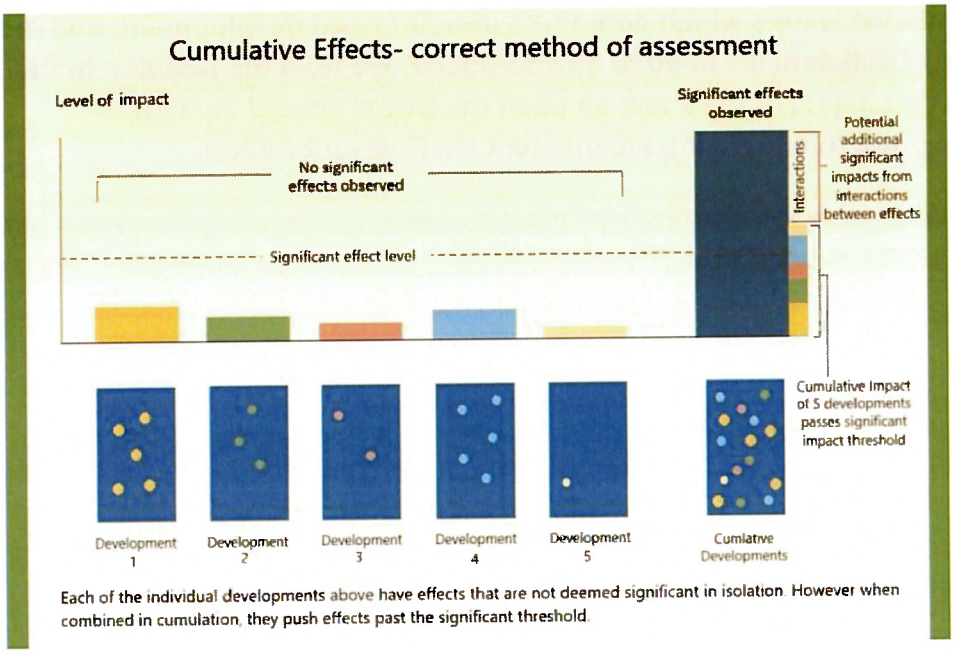


Figure 2. Correct method of cumulative assessment



Very Recent concerns have been raised about PFAS contamination of soils and water information has come to light of 150,000 tonnes of contaminated soil that may or may not relate to the North Runway consent being removed and sent to Norway for remediation treatment. The PFAS contamination can come from firefighting foams and de-icing agents used during the historical operations and operations of the North Runway.

The impact of PFAS contamination via surface runoff and ground water filtration needs to be assessed as part of this application. All monitoring data must be made available in compliance with the planning conditions. The increase in night flights will mean more planes will need to be de-iced in the colder nocturnal periods. This means an increase in PFAS contamination to surface waters. The Board cannot seek to make a decision without a full assessment via EIA and AA of the impact on SAC / SPA and the water body catchments that are receiving waters of the Airports surface runoff.

The applicant has failed to put definitive evidence before the Board on bird air strikes and impacts on SPAs. There are no up to date surveys provided in particular for the new Western Irish Sea SPA. The applicant's AA screening found no need for a stage two assessment with absolutely no evidence to base this outcome on. In response to frequency of bird strikes the applicant's response is vastly different to the information the IAA have in their 2022 safety review report which indicated that bird strikes are a major safety issue for the airport and its impacts on protected habitats and species needs to be assessed. The IAA report gives the exact numbers of bird strikes in 2022 and previous years. The applicant's previous response is insufficient, and a detailed and evidential assessment and report must be completed.

APPROPRIATE ASSESSMENT REVIEW

Insummary the compliance issues which constitute unauthorised development, and the EIA and AA assessment defic iencies need to be addressed. We hold the position in the first instance that section 34(12) applies and as such the Board should invalidate/ refuse the decision to grant this planning amendment via Relevant Action.

Appendix M – Passenger Cap Statistics

Passenger Cap Statistics

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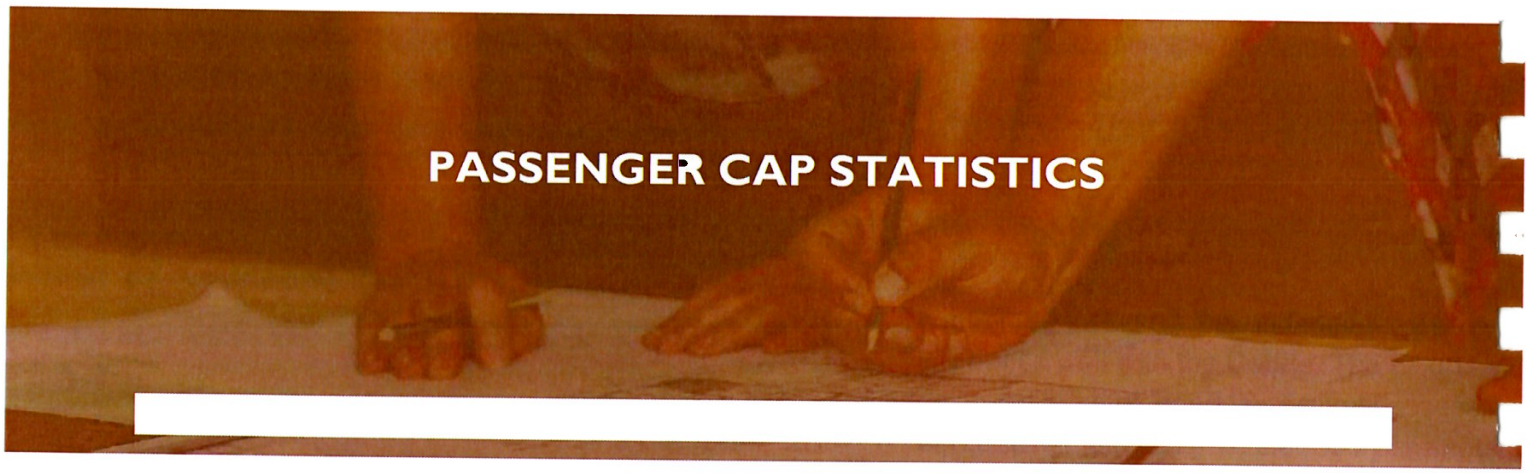

PASSENGER CAP STATISTICS

1.0 Passenger Numbers

1.1 Daa's Passenger Numbers

On the daa's corporate website, a section is devoted to '*Investor Relations*':

https://www.daa.ie/media-centre/investor-relations-2/.

At the bottom of this section, passenger statistics are provided on a monthly basis.

All the monthly passenger figures for 2023 can be accessed by clicking on '*2023 Passenger Statistics*':

PASSENGER CAP STATISTICS

Clicking on '*Passenger Statistics December, 2023*' reveals not only the December 2023 figures but also includes the cumulative Year To Date (YTD) passenger figures:

Dublin Airport - December 2023 Statistics

Region	Dec 2023	Dec 2022	% Change	YTD 2023	YTD 2022	% Change
Domestic	13,574	11,102	22%	156,570	128,549	22%
Great Britain	805,762	707,981	14%	9,518,467	7,778,809	22%
Rest of Europe	1,244,714	1,160,602	7%	18,672,355	15,980,480	17%
Transatlantic	254,897	238,231	7%	3,906,259	3,248,198	20%
Other International	86,862	72,066	21%	1,019,354	674,346	51%
Transit	632	19,226	-97%	249,589	275,180	-9%
Total Passengers	2,406,441	2,209,208	9%	33,522,594	28,085,562	19%
Commercial ATM's	17,321	16,378	6%	233,162	202,773	15%

The figures how that Dublin Airport handled 33,522,594 passengers in 2023, which is a clear breach of the 32mppa planning condition.

The November 2024 statistics show a further increase in passenger numbers of 5% compared to 2023:

Dublin Airport - November 2024 Statistics

Region	Nov 2024	Nov 2023	% Change	YTD 2024	YTD 2023	% Change
Domestic	12,195	12,678	-4%	162,943	142,996	14%
Great Britain	786,037	769,810	2%	8,981,214	8,712,705	3%
Rest of Europe	1,229,461	1,191,001	3%	18,129,892	17,427,641	4%
Transatlantic	240,924	244,484	-1%	3,904,885	3,651,362	7%
Other International	91,358	80,508	13%	1,062,488	932,492	14%
Transit	915	1,235	-26%	8,598	248,957	-97%
Total Passengers	2,360,890	2,299,716	3%	32,250,020	31,116,153	4%
Commercial ATM's	16,597	16,709	-1%	219,717	215,841	2%

The daa have had plenty of advance notice of these inevitable breaches and were served with enforcement warnings by Fingal County Council.

On January 24th the daa published figures for December 2023 and total figures for the whole of 2023:

https://www.dublinairport.com/latest-news/2024/01/24/almost-32-million-through-dublin-airport-s-terminals-in-2023

PA SSENGER CAP STATISTICS

2023 h Numbes	
Pass engersThrough Terminals	31,908,471
Connecting Passengers	1,081 800*
Other Passengers	532, 222**
Number of Flights	241,595

** This 1,081,800 figure represents the number of people who connected through the terminals at Dublin Airport (counted once); one person equals one passenger, as opposed to a double count of such people (as they take two flights (1 arriving and 1 departing) for aviation reporting purposes.*

*** Passengers that did not use the terminals include Transit passengers who do not exit the plane when landing at Dublin Airport, and other categories such as Search and Rescue and Air Ambulance.*

It is clear from the above description that the figure of 31,908,471 only includes 1,081,800 connecting passengers when in fact that figure should be doubled in line with International Aviation Convention. The daa cite the International Aviation Convention in their letter to An Bord Pleanála on June 28th, 2018, when the daa sought a section 146 (A) request to amend the 32mppa cap to be applicable to origin-destination passengers only:

https://planningapi.agileapplications.ie/api/application/document/FG/634827

In the letter by the Group Head of Planning, Ms Yvonne Dalton, she states:

> ***"In line with International Aviation Convention such passengers are counted twice, once as an arriving passenger, and secondly as a departing passenger even though it is a single person travelling through the airport. For example, 1,000 transfer passengers is actually 500 people travelling through the airport."***

So, the 1,081,800 figure is actua lpeople and this equates to 2,163,600 transfer passengers.

The '*Other Passengers'* category includes transit passengers and search and rescue and air ambulance passengers and their figure of 532,222 has also not been included in the headline figure of 31,908,471.

PASSENGER CAP STATISTICS

This reporting is flawed and inconsistent with the normal reporting of passenger numbers to their investors and to the CSO and Department of Transport.

It can only be construed that this is a deliberate attempt to mislead the Planning Authorities and the Irish public.

On the Dublin Airport webpage, the daa gave '*massaged*' figures for 2023 - https://www.dublinairport.com/latest-news/2024/01/24/almost-32-million-through-dublin-airport-s-terminals-in-2023:

2023 In Numbers	
Passengers Through Terminals	31,908,471
Connecting Passengers	1,081,800*
Other Passengers	532,222**

The total figure for 2023 is given as 31,908,471 passengers. They deliberately use the term '*Passenger Through Terminals*' to attempt to lower the number used by the International Aviation Convention.

They also list connecting passengers but count them singly in the total figures. The International Aviation Convention definition of passengers counts transfer passengers as both an arrival and a departing passenger. Therefore, an additional 1,081,800 passengers need to be added to the total figures. Also, the '*Other Passengers*' are excluded. Therefore, the total figure for 2023 in line with the International Aviation Convention is **33.522m**. as per the figures provided on the daa's Investor webpage.

There is undisputed proof based on pre-planning guidance given by Fingal County Council's Planning & Infrastructure Department to the daa in February 2020, and the decision by ABP in relation to the section 146 (A) request and the daa's own interpretation of the International Aviation Convention on passenger numbers, that the daa knowingly and deliberately handled over 33.522 million passengers in 2023.

New Enforcement Complaints have been sent to Fingal County Council for the new breach in 2024.

PASSENGER CAP STATISTICS

1. 2D epartment ofTransport – State Airport Statistics

The Department of Transport released 2023 aviation passenger numbers.

https://www.gov.ie/pdf/?file=https://assets.gov.ie/295870/3ecfe192-3b13-4451-a590-a6a1a63ddc8e.pdf#page=null

Table 1 shows the passenger numbers at Dublin Airport for 2022 and 2023:

Dublin Morthly Passen gerTraffic	2022	2023	% Ch ange
Jan	991 ,518	2,117,352	114
Feb	1 ,327,953	2,0 59 ,123	55
Mar	1, 859 ,976	2,482,617	33
A pr	2,392 ,124	2,834,472	18
May	2 ,604 ,252	3,049,800	17
Jun	2,850 267	3244,576	14
Jul	3,067 527	3,458,606	13
Au g	3,07 6083	3,456211	12
Sep	2, 782360	3112,385	12
Oct	2,7 13345	3,001,295	11
Nov	2,210949	2,299716	4
Dec	2,209 ,208	2,40644 1	9
YTD	2808 5,562	33522,594	19

Table1: Passenger traffic at Dublin Airport 2022 and 2023.

This again is clear evidence that Dublin Airport has breached its 32m cap in 2023.

1.3 36m Planning Application

The following planning notice was erected around Dublin Airport on December 18th 2024. It is an application to increase passenger number from 32m to 36m.

The application states that:

> "*To avoid uncertainties which have arisen in respect of the interpretation of the 32mppa Conditions, the application proposes that:*

- *The 32mppa limitation is enumerated on a terminal count basis (where one person equals one passenger, and discounting transit passengers, those who do not enter the terminal(s), and the double counting of transfer passengers); and*
- *The 36mppa limitation is enumerated on an aviation count basis (where a passenger is enumerated as a person carried on an aircraft and covered by a ticket in line with the definition of passenger by the International Air Transport Association (Ref. IATA, Standard Schedules Information Manual, RP1761b) and includes that a transfer passenger, is counted as two passengers)."*

Just to be very clear, there has been no uncertainty around the interpretation of the 32mppa cap. The only organisation to part from standard convention has been the daa. They are now stating that they will conform with the 36m application. In the next chapter evidence is provided to show that the Planning Authority had made the daa aware of their interpretation of the passenger numbers in pre-planning meetings attended by the daa.

In 2018, the Dublin Airport Authority made a request to An Bord Pleanála under S.146A to amend the wording of Condition no. 3 (PL06F. 220670) to remove connecting passengers from the scope of the condition. The amended wording sought to include the words highlighted in bold as follows:

> 3. *The combined capacity of Terminal 2 as permitted together with Terminal 1 shall not exceed 32 million* ***origin-destination*** *passengers per annum unless otherwise authorised by a further grant of planning permission.*

The daa's letter can be viewed at:

https://planningapi.agileapplications.ie/api/application/document/FG/634827

In the letter from the daa, they elaborate on passenger types. This line is extremely relevant:

> ***"In line with international aviation convention such passengers are counted twice, once as an arriving passenger and secondly as a departing passenger*** *eg. 1000 transfer passengers are actually 500 people travelling through the airport."*

Therefore, the daa clearly acknowledged their interpretation that, in line with International Aviation Convention, transfer passengers are counted twice.

PASSENGER CAP STATISTICS

Clarification of Passengers Types

For much of its history Dublin Airport operated as primarily an origin-destination airport. This means that Dublin was either the departing or arriving destination for most passengers. At the time of the grant of the T2 planning permission, 99% of passengers were origin-destination passengers.

Connecting passengers are passengers who may travel through Dublin Airport, but Dublin is not their final destination.

The vast majority of connecting passengers are transfer passengers. They may arrive into Dublin on one aircraft and switch aircraft to complete the second leg of their journey towards their final destination. These passengers remain airside, and have no impact on transportation requirements at the airport. In line with international aviation convention such passengers are counted twice, once as an arriving passenger, and secondly as a departing passenger even though it is a single person travelling through the airport. For example, 1,000 transfer passengers is actually 500 people travelling through the airport.

A second type of connecting passenger is a transit passenger. A small number of aircraft stop at Dublin Airport for technical reasons including to refuel. Passengers on these flights are counted as transiting through the airport although they do not generally use the terminal buildings as they remain on the aircraft during the transit stop. It is much clearer that condition no. 3 doesn't apply to such passengers, however we include them for overall context.

Transfer and transit (collectively referred to as connecting passengers) do not impact the transportation network. An airport that facilitates connecting passengers may be referred to as a hub airport.

ABP's Direction of August 2018 stated:

> "*It is considered that the alteration sought would be material in planning terms, and cannot, therefore be considered under S.146A of the Act. The Board considered that the proposed alteration would enable greater throughput of overall passenger numbers through the airport. This greater level of activity would have material planning consequences (in terms of movement and access to the airport, airport capacity, and also in relation to planning policy relation to the airport) and would go beyond what was permitted in the permission granted.*"

The decision on the S.146A application confirms that the limit of 32mmpa applies to **any** passenger type in the terminal buildings.

This new 36m planning application confirms that the daa deliberately misled the Planning Authorities and Judiciary on passenger numbers. They breached the cap in 2019, 2023 and again at the end of November 2024. Therefore, they are carrying out Unlawful Development. The Relevant Action cannot be granted while the daa are knowingly carrying out Unlawful Development and the Board must refuse the Relevant Action on that basis.

2.0 Operating Restriction

2.1 32m Passenger Cap – Operating Restriction

Article 2(6) of EU 598/2014 defines 'Operating Restrictions' as:

> *"'Operating restrictions' means a noise-related action that limits access to or reduces the operational capacity of an airport, including operating restrictions aimed at the withdrawal from operations of marginally compliant aircraft at specific airports as well as operating restrictions of a partial nature, which for example apply for an identified period of time during the day or only for certain runways at the airport."*

And a 'noise-related action' is defined in article 2(5):

> *"'noise-related action' means any measure that affects the noise climate around airports, for which the principles of the Balanced Approach apply, including other non-operational actions that can affect the number of people exposed to aircraft noise;"*

It is clear that the 32m passenger cap affects the noise climate around Dublin Airport and limits access to or reduces the operational capacity of Dublin Airport and, therefore, falls into the category of an Operating Restriction.

ANCA have also stated in a number of pre-planning meetings with the daa in relation to planning application F20A/0668, that the 32m passenger cap is an Operating Restriction.

In a meeting on February 5th, 2020, the minutes of the meetings from ANCA clearly state that it's ANCA's position that the **32m cap is an Operating Restriction**.

https://planningapi.agileapplications.ie/api/application/document/FG/707690

It was highlighted that each application will require a noise assessment and the timescale of possible regulatory processes needs to be carefully thought through as it is the position of ANCA that there are 3 Operating Restrictions:

1. **Condition No. 3 of F04A/1755 (PL 06F.217429) North Runway Permission.**
2. **Condition No. 5 of F04A/1755 (PL 06F.217429) North Runway Permission.**
3. **32 MPPA Passenger Cap on Terminal, 2 Condition No 3 of F06/1248 (06F.220670) & Terminal 1 Extension, Condtion No. 2 of F06A/1843 (06F.223469)**

ANCA advised that it must consider all Operating Restrictions *as part of the EU 598 Balanced Approach process.*

PASSENGER CAP STATISTICS

The minutes from the P&SI Department of the same meeting also state that ANCA is of the opinion that the **32m cap is an Operating Restriction** under EU598/2014:

https://planningapi.agileapplications.ie/api/application/document/FG/733927

- Discussion of procedural implications for the making of the planning applications and the content of same, following ANCA comment that in its opinion, the 32mppa cap included for in Condition 3 of F06A/1248 (PL 06F 220670) and Condition 2 of F06A/1843 (PL 06F 223469) is an operating restriction as per the Regulation Act, 2019.

- As daa plc representatives did not necessarily agree with that interpretation and referred to legal opinion they have stating such, there is agreement that a further Section 247 pre planning consultation would take place following the applicant's consideration of the implications of the 32mppa cap being an operating restriction.

In another pre-planning meeting on February 14th, 2020, it was re-iterated in the ANCA minutes that their opinion is that there are 3 Operating Restrictions:

https://planningapi.agileapplications.ie/api/application/document/FG/733840

It was re-iterated as per the meeting on February 5th that each application will require an assessment under the Act and Regulations and the timescale of possible regulatory processes needs to be carefully thought through as it is the position of ANCA that there are 3 Operating Restrictions.

The minutes from the P&SI Department of the same meeting show that the P&SI Department questions whether the 32m passenger cap application should be applied under section 34C of the Planning Act:

https://planningapi.agileapplications.ie/api/application/document/FG/733841

- The P&SI Dept requests that consideration be given to the planning implications that arise if the ANCA continues to consider the 32mppa passenger cap as an operating restriction and would be reviewing same as part of any EU Regulation 598 process. For example, whether:
  - It would be necessary to apply for permission to amend/ revoke Condition 3 of F06A/1843 and Condition 2 of F06A/1248.
  - That would be part of the intended S34C application (i.e. relating to Conditions 3d and 5 of F04A/1755).
  - The approach taken by the applicant should be as broad as possible to ensure correct procedure, transparency and third-party involvement.

PASSENGER CAP STATISTICS

In a meeting on February 25th, 2020, t heminutes from the P&SI Department show that they advised the daa that for enforcement purposes, they don't make any differentiation between passenger types:

h ttps.//planningapi agil eapplications.ie/api/apd ication/document/FG/737676

- Discussion on the interpretation of the 32mppa passenger capacity cap with regard to types of passengers, in particular the transfer/ transitpassengers.
- The P&SI Deptadvises the applicant that, with reference to ABP decisions and known international, European and national methods of counting pa ssengers at airports, the 32mppa passenger cap 'ncluded in Condition 3 of F06A/1248 (PL 06F 220670)and Condition 2 of F06A/1843 (PL 06F 223469) is considered to be a cumulative, annual figure comprising all passengers using (traveling to, through and from) Dublin Airport.
- The P&SI Dept advises the applicant that as the 32mppa cap is considered to be all inclusive figure, it is not considered possible/ practical for planning assessm entand subsequent enforcement purposes to make any differentiation between different types of passengers.

And in a meeting on September 16th, 2020, the daa presented a slide where they acknowledge that **ANCA deem the 32m cap an Operating Restriction:**

https://planningapi.agileapplicati onsie/api/application/document/FG/735166

Opera tingRestrictions at Dublin

North Runway planning permission

- Condition 3d: No use of North Runway at night (2300 to 0700)
- Condition 5: 65 movement cap at night averaged over 92-day modelling period
- Condition 4: Crosswind runway essential use only

T2/T1X planning permissions

- Condition 2: 32mppa cap is deemed an OR by ANCA

PASSENGER CAP STATISTICS

In conclusion, the pre-planning meeting minutes show unequivocal evidence that ANCA deem the 32m passenger cap as an Operating Restriction under EU598/2014, and that the daa acknowledged this understanding, and that the Planning Authority included all passenger types for enforcement purposes.

It is imperative that ABP understand that there's a clear breach of the passenger cap in 2019, 2023 and now again in 2021. The passenger cap was as a result of a condition of planning from ABP itself. To ensure the integrity of ABP it must uphold its own planning conditions and declare the current breach as unauthorised development which must be regularised before any grant of the Relevant Action.

To ensure the integrity of ABP it must uphold its own planning conditions and declare the current breach as Unauthorised Development which must be regularised before any grant of the Relevant Action.

Appendix N - PFAS

PFAS Contamination

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1.0 PFAS Contamination

1.1 PFAS

It has become public knowledge that there's a sizeable PFAS contamination issue at Dublin Airport.

https://www.irishtimes.com/transport/2023/03/17/dublin-airport-operator-examining-potential-impact-of-forever-chemicals/

Also, at a DAEWG meeting on the 15th of March 2023, the daa's Head of Environmental Sustainability advised members that:

> *"daa is examining the potential impact of PFAS at Dublin Airport and is engaging with the relevant environmental regulators to ensure best practice in managing this issue".*

https://www.dublinairport.com/docs/default-source/community-engagement/15-march-2023---daewg-meeting-minutes-approved.pdf

This Relevant Action application makes no reference to PFAS contamination and doesn't take account of it in any cumulative or in-combination assessment. PFAS has not formed part of any screening process and therefore the screening is deficient.

It has also been reported that Geminor have been appointed to ship 150,000 tonnes of PFAS contaminated soil from Dublin Airport to Norway for processing:

https://www.energiaktuelt.no/sender-80-000-tonn-pfas-forurensede-jordmasser-til-sikker-deponering.6623054-575505.html

(Translation below)

This work by Geminor also has not formed part of any planning application or environmental assessment and has involved no public consultation. This PFAS treatment and removal needs to be investigated by the Board and the current application cannot proceed until proper screening and assessment has been carried out.

PFAS CONTAMINATION

Surface Water Quality Objectives

In a related Airfield Drainage Application (ADP) it is noted at Section 1.1.1 of the Engineering Design Report by Nicholas O Dwyer that the project has been developed in accordance with the targets set out in the Dublin Airport Drainage Management Plan (DMaP) which is said to have been developed by daa following extensive engagement with Fingal County Council, Inland Fisheries Ireland, LAWPRO and the EPA during preparation of the ADP. We note the public announcement by Geminor who confirmed that they have been engaged by daa to excavate and remove 150,000 tonnes of PFAS contaminated material and transport it abroad.

We at St Margarets The Ward Residents Group attend meetings with DAA and Fingal on Community issues and the issue of PFAS has had very little airing. The local communities have been kept in the dark. LAWPRO the Local Authorities Waters Program clearly state that Community Engagement is the cornerstone of their approach to combine local and expert knowledge for a better understanding of what's happening in a local catchment and waterbody.

None of the documentation submitted by the daa deals with the contamination, the effects on our groundwater and surface water and what mitigation measures are required. In fact, we are not sure if residual damage has been caused and the contamination may have migrated off site to our community receptors.

Excavated Material

It is noted that as part of the Airfield Drainage Application, 306,000 cubic meters of soil is to be excavated and transported off site resulting in a huge increase in construction traffic on the local roads. Daa also been granted planning permission for an underpass at Dublin Airport and which is to remove over 350,000 cubic meters of soil from Dublin airport. Daa have also applied to increase capacity at Dublin Airport above the 32m passenger cap which will include major infrastructure development. The construction of the North Runway also involved extensive ground works and there has been no accountability as to the effects of this construction on PFAS contamination of the waterways. **There has never been full Appropriate Assessment carried out on the North Runway project to date, and its extension, in breach of the Aarhus Convention.**

The accumulative effects of all of these projects have not been reviewed for their total Environmental Impact and not properly mtigated against. This is a blatant case of Project Splitting by daa and as such this application should be rejected until a full and proper Environmental Impact Assessment on all proposed works at Dublin Airport is carried out and presented to us as an affected community and in accordance with European and Irish Legislation.

PFAS CONTAMINATION

F19A/0149

A non-Dublin Airport planning application F19A/0149 was for the:

> *"Remediation by excavation and removal of circa 22,000 cubic metres of mixed waste material illegally deposited on lands at Belcamp. The project will involve site preparatory works, excavation and infill works, installation of a cut-off wall to the south and south west and restoration with grass and treeline where applicable. An Environmental Impact Assessment report (EIAR) and Natura Impact Statement (NIS) has been prepared and accompanies this planning application and is available for inspection."*

The lands affected belong to the IDA and in section 1.2.1 of the EIAR attached to the project, it states that the *"final step in the screening process is to determine the need for an EIA on a discretionary basis. It has been determined in consultation with Fingal County Council (September 26th, 2018) that an EIAR should be undertaken. The EIAR allows the sensitivity of the environment to be assessed and determine whether the project is likely to cause significant effects."*

F19A/0149 sets a clear precedence. PFAS chemicals are a serious health concern and an EIAR and AA are necessary.

It is also clear from recommendation #20 in the EPA's National Hazardous Waste Management Plan 2021-2027 that an EIA and AA are necessary:

> *"Ensure that all plans, projects and activities requiring consent arising from the NHWMP are subject to the relevant regulatory environmental assessment requirements including SEA, EIA and AA as appropriate."*

However, there is no mention of PFAS in the EIAR or AA for the Relevant Action. There is a clear requirement to screen this contamination out.

Appendix

https://www.energiaktuelt.no/sender-80-000-tonn-pfas-forurensede-jordmasser-til-sikker-deponering.6623054-575505.html

Photo: Geminor.

Sends 80,000 tonnes of PFAS-contaminated soil for safe disposal

Written by the editors
Published29 September 2023
Updated September 29, 2023

The Karmøy-based recycling company Geminor is participating this autumn in the removal of large quantities of PFAS-contaminated masses from Ireland's largest airport, Dublin International Airport.

- PFAS pollution is an extensive problem in Europe, where industry and especially airports are affected, says responsible for hazardous waste in Geminor, Bjørn Håland.

In collaboration with local partners in Ireland, this autumn Geminor will provide handling, logistics and final treatment of PFAS-contaminated soil masses from Dublin International Airport. In total, more than 150,000 tonnes of earth masses will be removed from the airport in the project, of which around half of the masses will be handled by Geminor, the company reports in a press release.

The PFAS-contaminated soil masses are removed in connection with the airport undergoing a major development project of outdoor area. The project has required extensive mapping, planning and facilitation in order to be carried out at the same time as normal operation of the airport.

The PFAS masses are sent to Norway for regulatory and safe final treatment, explains Håland.

- This is an extensive project and one of the larger individual projects we have been involved in when it comes to contaminated masses in Europe. The masses are transported to Norway with bulk carriers of the order of 6,000 to 9,500 tonnes per transport, explains Håland.

A significant and pending problem

The project at Dublin International Airport is an example of how extensive the current PFAS challenges are in Europe today, explains Håland.

- A great many airports and industrial areas have been contaminated with various PFAS compounds over many decades. The main culprit at airports is foam from fire drills. Today, there are millions of tonnes of PFAS-contaminated masses waiting to be handled properly. Many of these tonnes are located in Norway, explains Bjørn Håland.

Projects like this – which involve handling permits, logistics and final processing – often mean lengthy and demanding processes. Both time consumption, costs and a lack of knowledge mean that many players are reluctant to tackle absolutely necessary clean-up, Håland believes.

Cian O'Hora, Managing Director IMS Site Services Ltd. (t), is a partner of Geminor in the project. On the right, Bjørn Håland in Geminor. Photo: Geminor

- In Europe today, there is a lack of good solutions for these polluted masses. It is often complicated for contractors and local waste companies to handle PFAS, as they often have to comply with international laws and regulations.

- The solution to the challenges is complex, but is about more people having to take responsibility. Long lead times mean that the actors who get rid of PFAS must plan this thoroughly and early. At the same time, authorities must facilitate a more flexible bureaucracy, whether we are talking about landfill or other solutions. We are keen to contribute to this work internationally, concludes Bjørn Håland, responsible for hazardous waste in Geminor.

1.2 Environmental Management of PFAS Compounds

In April 2024 the daa uploaded 4 documents to their website at https://www.dublinairport.com/corporate/environmental-social-governance/sustainability

1) Daa Statement April 2024
2) PFAS FAQ April 2024
3) 2021 – 2023 Environmental Monitoring Non-Technical Summary
4) 2021-2023 Environmental Monitoring Report

In section 5.1 of the document '*2021 – 2023 Environmental Monitoring Non-Technical Summary*', it states:

- **Groundwater**:
  - The highest Sum of 20 PFAS concentrations in groundwater were detected at the site of a former firefighting training ground, where maximum concentrations of **4,111ng/l** were reported.
- **Surface Water**:
  - The highest PFOS concentration in surface water was detected in the Cuckoo Stream at 50.6ng/l (May 2023).
  - The highest PFOS concentration in airside surface water (**1,430ng/l** in March 2022) was recorded in a manhole to the north of the North Apron. The source of PFOS is indicated to be from the Former Fire Station at the North Apron.
- **Soil/Concrete**:
  - The highest concentrations of individual PFAS constituents in soils/concrete were **568µg/kg** in Apron 5H.

These are alarming levels of PFOS / PFAS. The recommendations of the report are:

> "*Based on the findings of this report, it is recommended to quantify the risk from PFAS present in soil, concrete, groundwater and surface water at the airport and further investigations should be carried out having regard to the process outlined in the EPA's Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites. This is likely to include further site investigations to assist in the further development of the Conceptual Site Model (CSM) to assess potential source, pathway and receptor linkages, together with a Detailed Quantitative Risk Assessment (DQRA) to inform future mitigation options, if required.*
> *It is recommended that engagement with the regulators (Fingal County Council and EPA) continues to assist in informing the scope of the further studies and investigations.*"

It is evident from this report that further site investigations are required to inform future mitigation options.

PFAS CONTAMINATION

In section 4.1.3 of the *'2021 – 2023 Environmental Monitoring Report'*, https://www.dublinairport.com/docs/default-source/sustainability-reports/2021-2023-environmental-monitoring-report.pdf, it lists possible receptors:

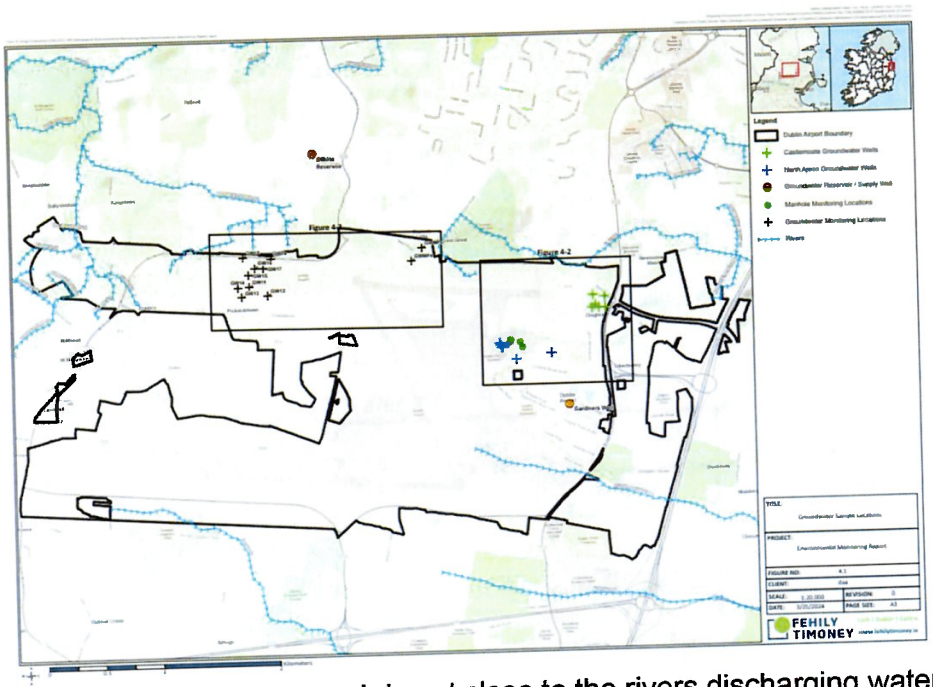
- Special Areas of Conservation:
  - Malahide Estuary (Site code 000205)
  - Baldoyle Bay (Site code 000 199)
  - North Dublin Bay (Site code 000206)
- Special Protection Areas:
  - Malahide Estuary (Site code 004025)
  - Baldoyle Bay (Site code 004016)
  - North-West Irish Sea (Site code 004236)
  - North Bull Island (Site code 004006)

This again is an extraordinary finding as surface water containing PFAS / PFOS discharges to these SPAs and SACs. What is extremely concerning is that the daa have never screened for PFAS / PFOS in this Relevant Action application, nor any other project since they have become aware of the PFAS / PFOS contamination.

Another erroneous comment in this section is:

> *"Available information indicates there are likely not any groundwater abstraction points or drinking water users. The main receptors will arise from interactions with surface water."*

However, the EPA's Water Abstraction Register – December 2023, https://www.epa.ie/publications/monitoring--assessment/freshwater--marine/Abstraction-Register-December-2023-for-publication.xlsx, shows that Ke elings Retail have 9 abstraction locations registered with the EPA for the Swords area.
The report only references a single private offsite reservoir which is further awa yfrom the Airport lands than some of the EPA registered abstraction locations .



The private offsite reservoir is not close to the rivers discharging water from the Airport lands.

Below is one of the EPA's abstraction registry points. This abstraction point is adjacent to the Barberstown 08 water feature which feeds into the Ward River.

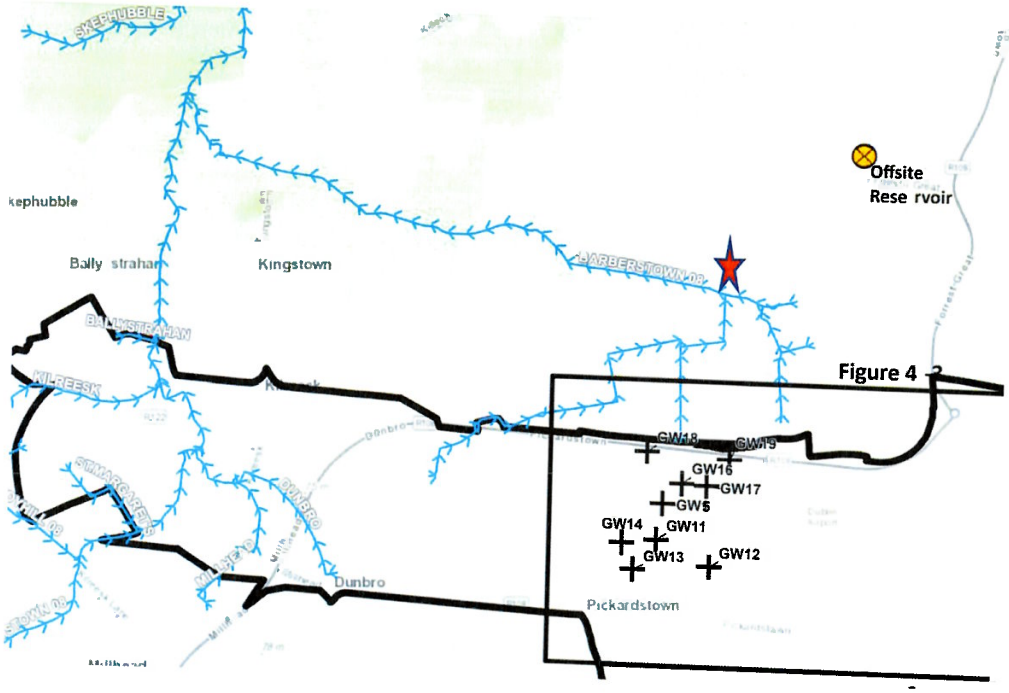


Figure 4 -3

What is of major concern is that Keelings Retail is a major grower of fresh fruit supplying the Irish market. Their website states that they produce approximately 200 million strawberries each year, as well as other fruit and vegetables. It is paramount that Fingal County Council engage with the appropriate health authorities and Food Safety authorities to ensure all produce is tested for PFAS / PFOS and that it is safe for human consumption.

The monitoring well GW11 is located at the **APEC 5 site directly under the North Runway**

> *"The results indicate the highest residual concentrations (up to over **4,000 ng/l**) of Sum of 20 PFAS remain within the original source, i.e. within the APEC 5 boundary, with the plume primarily extending west to GW14 and north to GW11. Maximum and average Sum of 20 PFAS concentrations reduce significantly over distances of approximately 150m to GW14 (1,712; 521.8ng/l, respectively) and GW16 (257.7; 165.4ng/l, respectively)."*

Over 4,000ng/l is an astonishing level of Sum of 20 PFAS . And even the measured values at GW14 and GW16 far exceed the GAC limit of 100 ng/l.

What is also very worrying is that the trend of PFAS contamination is increasing significantly over time.

CLIENT: daa plc
PROJECT NAME: 2021 - 2023 Environmental Monitoring Report

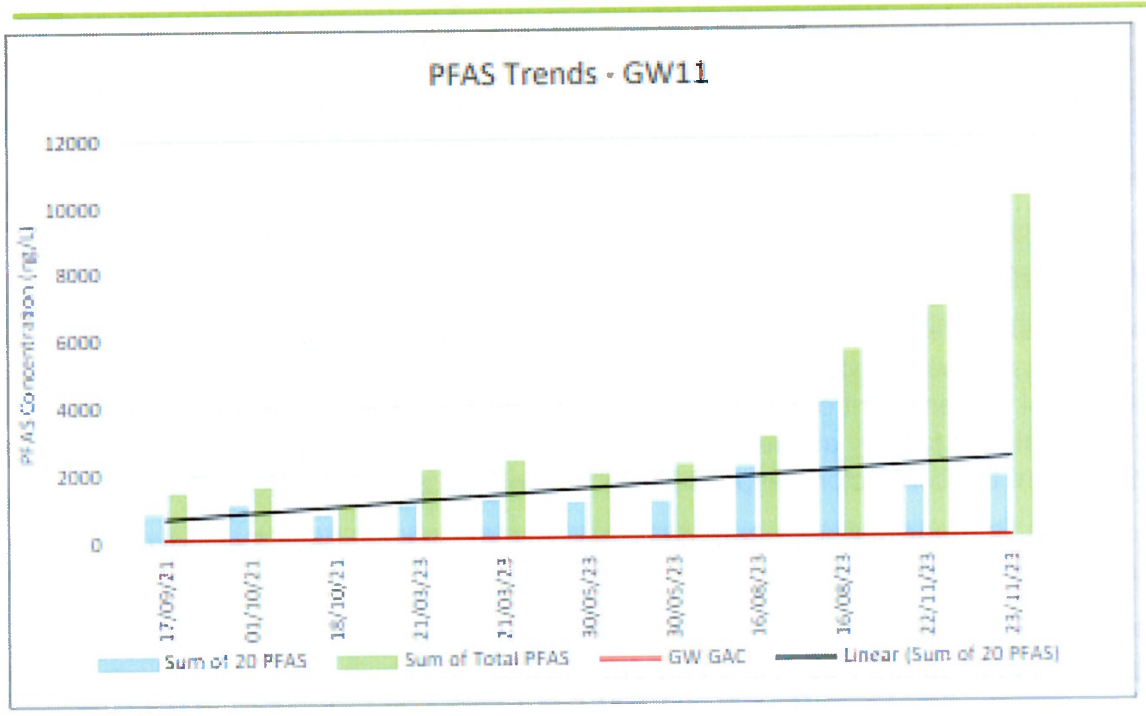


Figure 4-25: Sum of PFAS Concentrations at GW11 (Above GAC)

Parameter	Unit	01/10/21	01/10/21	18/10/21	21/03/23	21/03/23	30/05/23	30/05/23	16/08/23	16/08/23	22/11/23	23/11/23
Sum of 20 PFAS	ng/l	878	1125	810	1123	1238	1158	1183	2213	4110	1577	1878
Sum of Total PFAS	ng/l	1509	1657	1063	2157	2412	1986	2283	3095	5643	6939	10169

The report does not discuss the alarming rise in Sum of Total PFAS.

PFAS CONTAMINATION

Documents released by the OCEI

Following an AIE request to Fingal County Council regarding PFAS contamination at Dublin Airport, Fingal County Council made the decision to release three documents. The daa appealed the decision to release two of the documents to the Commissioner and the Commissioner found in favour of Fingal County Council. The decision is available at:

https://oce.ie/en/ombudsman-decision/7db6ad aa-public limited-company-and-fingal-county-council/

Upon release, the daa made the documents available on their website:

https://www.dublinairport.com/corporate/airport-development/north-runway/environment/soil-and-water-management

The two documents are different to the documents previously made available by the daa. These two new documents were undertaken by Fehily Timoney who were retained by RoadBridge to undertake a Risk Assessment of PFAS contamination on groundwater and surface water at the **former Fire Training facility at the Dublin Airport, North Runway development (APEC 5).** RoadBridge were the contractors responsible for the construction of the North Runway.

The report titled '*Groundwater and Surface Water Risk Assessment and Remediation Options Appraisal*', states in section 1.1 that:

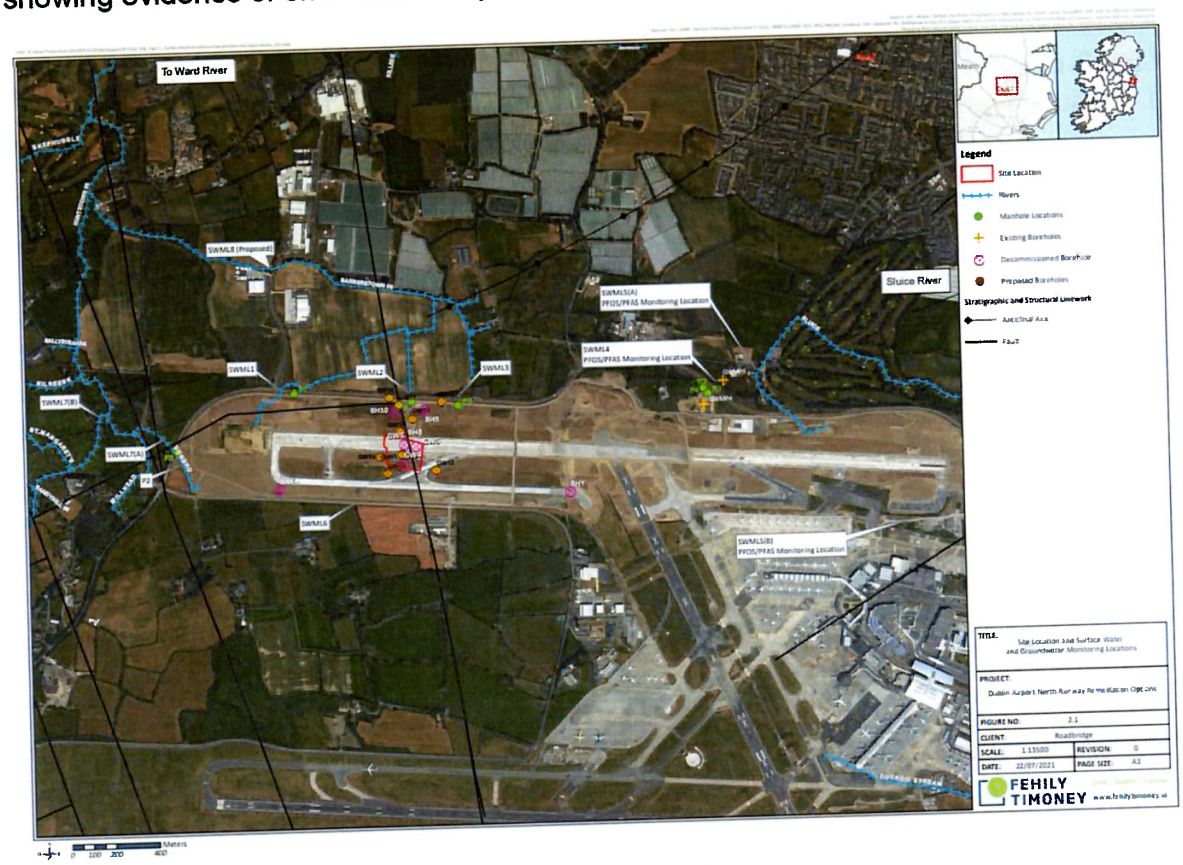
> *"The detected concentrations of Total PFOS at the off-site surface water monitoring points sampled between January 2018 and July 2021 exceeded the:*
>
> - *0.65 ng/l (the annual Average Environmental Quality Standards (EQS) for Inland Surface Waters for Total PFOS set by S.I. No. 386 of 2015)."*

> *"A number of the groundwater monitoring locations during the period January 2018 and October 2018 exceeded the Total PFOS 0.07 µg/l threshold value (defined by the United States Environmental Protection Agency (USEPA) Drinking Water Advisories for PFOS and PFOA)."*

In section 1.1 on Conclusion and Recommendations, it states that PFAS contaminated soil was removed from the APEC 5 site and used as a general fill to reinstate the pre-cast concrete R2 and P5 attenuation tanks. The reports states that residual contamination remains within the APEC 5 site boundary. Regarding Groundwater, it states that the risk to potential users of shallow bedrock groundwater is inconclusive.

On Surface water, the report states that the monitoring results for Total PFOS exceeded 0.65ng/l, the Annual Average EQS for Inland Surface Waters as set out in SI No. 386 of 2015.

It also states that there is evidence of elevated concentrations of other PFAS compounds, showing evidence of environmental pollution.



Section 5.1.4 lists the potential receptors of contaminants:

- The shallow weathered bedrock aquifer located around or beneath the former fire training ground (APEC 5).
- The deep limestone bedrock aquifer.
- **The North Runway Development site surface water drainage which discharges to the River Sluice.**
- Aquatic life located within the Sluice and Ward Rivers (which flows into the Broad Meadow River).
- Humans located within close proximity to the site.
- Irrigated Keeling production facilities located approximately 1 km north of the site.

- The Malahide Proposed Natural Heritage Areas: Malahide Estuary (Site Code 000205) and the Broadmeadow/Swords Estuary Special Protection Areas (SPA) (site code 004025). Both sites are located approximately 6 km north east of the project site.

Section 5.2.3 outlines that the risk to on and off-site surface waters and aquatic life will be medium. It also states that:

> *"A possible on-going risk is posed to Human Health during and post construction activities based on horizontal migration away from the source (via groundwater beneath the site) and potential human ingestion and dermal contact with groundwater or surface water during or post construction activities."*

There are some alarming statements in section 5.2.4 regarding Keelings. It states that the GSI has no records of boreholes being present on site to supplement irrigation. Yet it is clear from the EPA's registry of abstraction licenses that Keelings have a number of abstraction locations on-site.

Keelings is traversed by the Barberstown 08 water feature which is connected to surface water run off from the Airport lands as can be seen in the Conceptual Site Model for Apec 5:

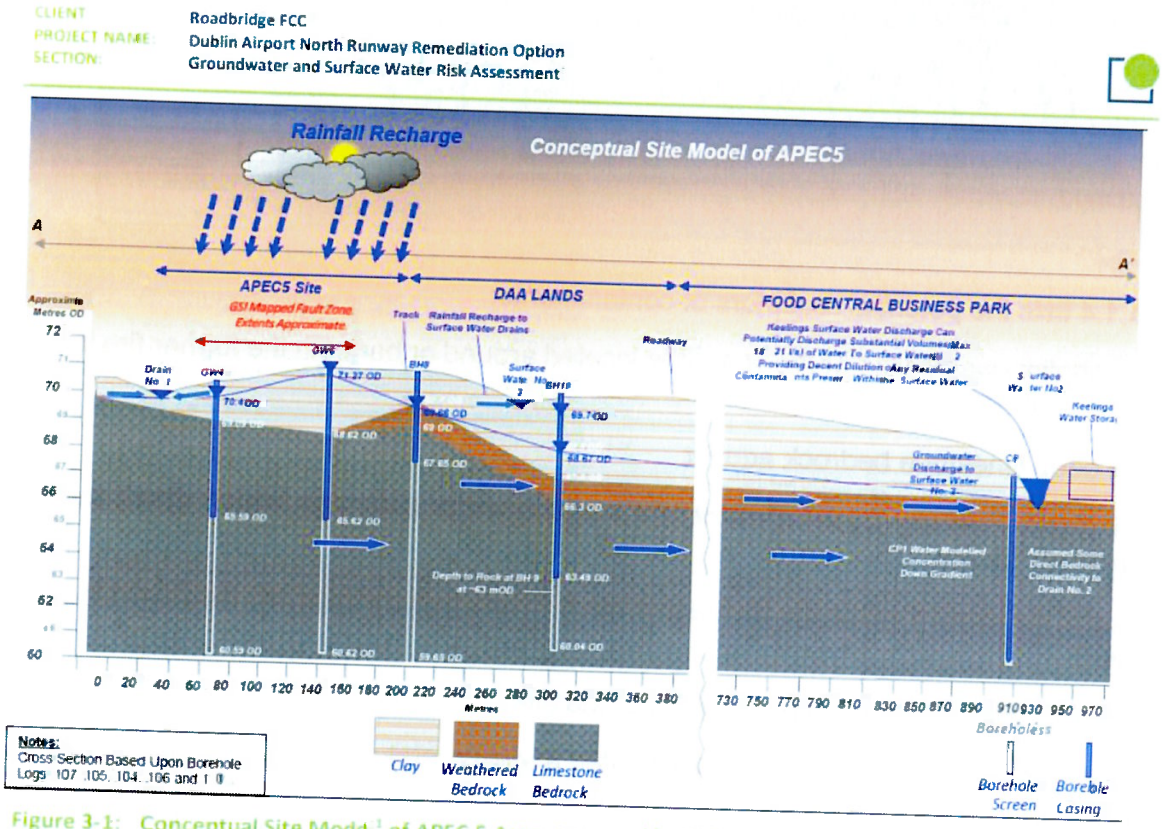


Figure 3-1: Conceptual Site Model of APEC 5 Area, prepared by IE Consulting and Reproduced from the November 2018 DQRA. (Section Running North-South see Figure 3.7)

PFAS CONTAMINATION

This Conceptual Site Model was developed in 2018 and therefore the daa have been aware since then of the risks to the contamination of Keelings lands.

Groundwater monitoring results from January 2018 clearly showed elevated levels of PFOS:

Table 3-2: Groundwater Monitoring Results January 2018: PFOS/PFOA Screening (Reproduced from Table 4-3 of November 2018 DQRA)

Parameter	Units	No of tests	Guideline Values	Exceedances	GW4	GW5	GW6	BH08	BH09	BH10	BH105	BH107
Total PFOS	ng/l	6	1000[1]	1	1,630	884	443	201	<LOD	<LOD	<LOD	<LOD
Total PFOS & PFOA	ng/l	6	70[2]	4	2,434	2,354	745	244.1	<LOD	<LOD	<LOD	<LOD

Note 1: *EPA: A Proposed Approach for the Development and Application of Guideline Values for Groundwater*
Note 2: United States Environmental Protection Agency (USEPA) Drinking Water Advisories for PFOA and PFOS
* <LOD: Below Laboratory Limit of Detection

Section 3.3 states:

> *"Monitoring findings from previous investigations confirmed that residual concentrations of PFOS and PFOA remain within shallow bedrock groundwater beneath the APEC 5 site. A number of the groundwater monitoring locations* ***exceeded USEPA Drinking Water Advisories for PFOS and PFOA threshold values.***
>
> *The results of the surface water sampling undertaken as part of the November 2018 DQRA Dublin Airport North Runway: APEC 5 Detailed Quantitative Risk Assessment indicated that* ***PFOS/PFOA contaminated surface waters migrated off-site via drainage channels and impacted off-site surface water receptors (River Ward).***"

Diversion Application form for Cuckoo Stream

In the accompanying RFI material for the Airport Drainage Application, a Diversion Application form has been included which has been submitted to Uisce Eireann. In section 12 of this form, the question is asked '***Are there potential contaminated land issues?***' and no response is given as can be seen below. Therefore, the daa have not made Uisce Eireann aware of the known large scale PFAS / PFOS contamination which is a very serious dereliction of duty.

11 *Confirmation of Land Ownership:

Please confirm the name and address of the landowner and provide the folio details of the land where the diversion is proposed:

FINGAL CITY COUNCIL

Note:
1. Enter "My Land" if this is the case.
2. If land is in ownership of a third-party, a letter of consent to the proposed diversion works is required to be provided by the third-party landowner as part of this application. A formal easement will be required from the third-party landowner should the diversion progress.

12 *Are there potential contaminated land issues? Yes ☐ No ☐

1.3 MetroLink

Also included in this submission is AIE material provided by TII. At the Oral Hearing on the MetroLink project, concerns were raised about the PFAS contamination at Dublin Airport. A number of the records received by AIE are worth highlighting:

Record 48 (18/07/'24):

Key points are that there are clear information gaps and the daa reports don't present the full picture. They acknowledge there's a clear PFAS problem at this location and that PFAS is going to come out of the ground and tunnel.

From: [redacted]
Sent: Thursday, July 18, 2024 8:49 AM
To: [redacted]
Cc: [redacted]
Subject: [EXTERNAL] PFAS - talking points for Friday meeting [ALGDMS-MAIN.225982.01430386.FID826971]

[redacted]

As discussed, some structure/talking points ahead of tomorrow's call:

Why is this important? Context?
Asbestos of the manufacturing world – carcinogenic / consequence

Context of the project: [redacted]submission – consenting risk and JR risk

PFAS has not been well understood; there's a growing focus on it and the risks it presents
Challenge at Dublin airport – there are clear information gaps: we don't have a clear baseline, or a full data-set; FT report by daa doesn't present the full picture
The result? – we're not sure of the full extent of this as a problem
But it's clear: there is a PFAS problem at this location.
PFAS is going to come out of the ground and tunnel (out of d-walls and box excavation); it could be more difficult to control under TBM

What we're trying to achieve:

- We need to get as much info as possible – boreholes, monitoring – we need to plug the information gaps
- How do we take it out of the ground safely and isolate it?- this ties into mitigation (and the risk of leakage)
- How do we safely dispose of it?

3 key pillars: information, mitigation, disposal

4 immediate steps that need to be prioritised on this workstream as a matter of urgency:

1. The project needs to do monitoring at Dublin airport – TII needs to engage with daa re borehole locations and when this can be done (asap)
2. TII need to meet with daa to get a clearer sense of the problem and how they're managing this
3. The project needs to discuss management of this as a waste product and its disposal (PFAS can't be treated in Ireland – there is no facility here to accept this)
4. JI will review existing mitigation measures, and explain more clearly how these (& any additional mitigations) will manage the problem

We need to have a dedicated working group, focused on this subject, that meets regularly to discuss progress updates.

[redacted] I'm in meetings until 5pm – could you email Paolo, Nigel and Aidan about having 15 minutes in tomorrow morning's meeting dedicated to this subject?

Record 44 (02/07/'24):

This record shows that TII are correctly looking at the **Cumulative Impact Assessment** and **In Combination Assessment for NIS**. This is exactly what the daa should be doing with this Relevant Action application and it's incomprehensible that Fingal County Council did not come to the same conclus ion

From: [redacted]
Sent on: 02 J uly2024 20:06:18
To: [redacted]
CC: [redacted]
Subject: RE: Timing on CIA / [redacted]response [ALGDMS- MAIN.25982.01430386.FID826971]

Thanks [redacted]

[redacted]

I will forward an outline programme for the CIA, however, at a high level it is worth saying the following.

1. The completion of the Cumulative Impact Assessment will be a number of weeks – I currently predict 4 -5 weeks, but because of the unknown nature of this work and lack of precedent, it is possible we will come across some speed bumps that will slow us down;
2. Similar for the In Combination Assessment (for NIS), but this needs to be confirmed by SC who are currently addressing this issue for the Bus Connects Blackrock JR.
3. For the other [redacted]ssues i.e PFAS, Sludge Hub centre, Ringsend WwTP, Cable Routes and WFD query, we will need c. 2 weeks to complete.

Overall, a decision to include the additional materialreferenced above would result in a delay in the readvertisement of the Oral Hearing material.

To my mind we are going out to consultation on a significant quantum of additional material already as requested by the Board. This is likely to raise further potentially significant querie s/questions/submissions that we will need to address in the response document. In that context, I would see merit in addressing the [redacted]submission items there (rather than delay the re - advertisement). Then the Board will be in a position to review our responses to all of these items to decide whether to approve, RFI or to set up another Oral Hearing.

I hope that this helps

Best Regards

1.4 Conclusion

The daa have known about PFAS contamination since as early as 2016 during construction of the North Runway and yet none of their Environmental Assessments since then even mention PFAS yet alone provide mitigation and remedial measures. There is also a duty to protect the SACs and SPAs along the Fingal coastline. An Bord Pleanála must ensure that the health of Irish people is not impacted by the produce from Keeling's farm which is adjacent to the North Runway and through which waters from the airport flows along the Barberstown 08 to the Ward River. An Bord Pleanála should request input from other authorities such as the HSE, Food Safety Authority, Inland Fisheries and the NPWS should be immediately notified if not already done so. The dangerous levels of PFAS / PFOS have been known for a long number of years now and the daa have only recently contacted the relevant authorities. The response from the daa was to initially remove and bury known contaminated soil from the North Runway site around attenuation tanks and continue with the North Runway development. This was a major mistake as the PFAS levels under the North Runway are at dangerous levels. PFAS contaminated soil has also been found at other sites at the airport and large amounts of contaminated soil from the Apron 5H development has been shipped to Norway for remediation.

The cumulative impacts of the contamination at the Apron 5H development site should be assessed in conjunction with this Relevant Action application. The whole airport site needs to be addressed for PFAS / PFOS contamination as a whole and not the piecemeal approach thus far. The need for Cumulative Assessment and In Combination Assessment are highlighted in the advice given to TII. TII are taking the PFAS situation very seriously and understand their obligations which are clearly lacking with the daa. TII acknowledge that their development will lead to PFAS release into the environment.

The daa have been aware since 2016 of the PFAS issue and decided to literally bury the evidence in order that the North Runway project would not be delayed. No consultation with State Authorities was carried out at the time. We note that no full AA was ever carried out on the North Runway. The daa knew of the PFAS contamination and yet still went ahead without addressing it and even got a time extension and defended High Court proceedings while still burying knowledge of this contamination. The North Runway should be classed as **Unauthorised Development**, and we ask that the Board make a ruling on this.

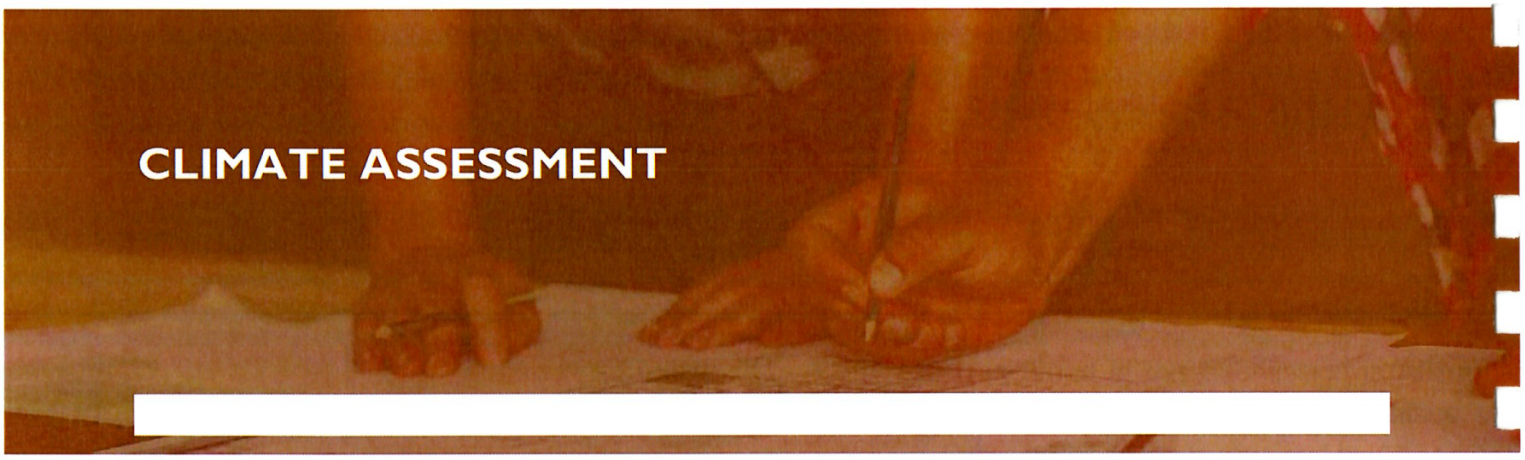
An Bord Pleanála are mandated to refuse planning permission based on the total lack of screening and assessment of PFAS / PFOS contamination and its impact on European sites.

Appendix O - Climate

Climate Assessment

Table of Contents

CLIMATE ASSESSMENT



1.0 Climate

1.0 Inspector's Report

Section 13.8 deals with Climate and Carbon. In 13.8.1 the Inspector incorrectly states that there will be an increase of just 13 ATMs from 2025 to 2035 between the Permitted and Proposed scenarios. It is 13,000 additional ATMs and not 13. Please refer to Table 11-1 in the EIAR.

Table 11-1: Permitted and Proposed Annual ATM Projections for each Assessment Year (000s)

Year	Scenario		
	Permitted	Proposed	Variation
2025	227	240	13
2035	228	240	0

In section 13.8.3 under Conclusion for legislation and policy, the Inspector states that:

> *"the reductions in CHG emissions associated with the aviation industry is being dealt with at an international and EU level with an important initiative ReFuelEU set to significantly address sustainable aviation fuel."*

On December 10th 2024, the Head of IATA ,Willie Walsh, addressed the issue of Sustainable Aviation Fuel (SAF) at an IATA media day in Geneva, https://www.reuters.com/business/aerospace-defense/global-airlines-could-miss-sustainable-fuel-targets-iatas-walsh-says-2024-12-10/. With reference to achieving net zero emissions by 2050, Mr Walsh stated:

> *"We're not making as much progress as we'd hoped for and we're certainly not making as much progress as we need"*

Sustainable aviation fuel makes up only around 0.3% of the world's jet fuel usage and is projected to only account for 07% by 2025, according to IATA data, with experts saying the

production rate of the green fuel needs to grow quickly for the sector to achieve its emissions goals.

An IATA study presented at the media day showed that global production of green jet fuel in 2024 was only 1 million tons, https://www.iata.org/en/iata-repository/pressroom/presentations/sustainability-saf-outlook-registry-gmd-2024/, lower than IATA's projection a year ago that it would be 1.5 million tons.

Walsh pointed to a lack of biorefineries under construction which could produce the green jet fuel, many of which require extensive capital expenditure to get built.

It is therefore incorrect to say that ReFuelEU is going to significantly address sustainable aviation fuel.

It is also incorrect to say that the Relevant Action is not required to comply with any national GHG emissions targets. Ireland is a signatory to the Paris Agreement. Signatories of the agreement are obligated to implement "*economy-wide absolute emission reduction targets*", that is, to control anthropogenic emissions so that global warming is limited to well below 2°C and preferably stays within the limit of 1.5°C. A failure to address all anthropogenic emissions, including shipping and aviation, would violate the central aim of the Agreement. Legal opinion obtained by Transport & Environment (T&E) is discussed below.

In section 13.8.6 the Inspector assesses the issues and Significance of effects. **The Inspector points out that the 13,000-movement limit is required to support a reduction in GHG emissions**:

> *"These results indicate that there will be a doubling of night flights under the proposed scenario rather than the permitted scenario, although the applicants forecasting has regard for the total increase of annual aircraft movements (i.e., 13,000). Recommendation throughout my planning assessment supports the introduction of an aircraft moment restriction, in addition to the NQS. The move towards less noisy modern aircraft,* ***in compliance with an aircraft movement restriction, can support a reduction in CHG emissions*** *and while there will be an increase in emissions, there would be no further increase and a potential for decrease in the long term. In addition, the EIAR assumes the worst-case scenario in the number of aircraft movement- i.e., on a busy summer day, therefore the overall proposed aircraft movement, for 2025, provides a worst-case scenario for CHG emissions from the proposed development."*

The Inspector also states that a restriction on aircraft movements would impact on the significance of GHG emissions:

> *"The Board will note the applicant has not factored in any compliance with the EU targets for addressing carbon emissions in the aviation sector, although referenced*

> *these within the accompanying documents .Having regard to the proposed modernisation of fleet mix,* ***in conjunction with the recommendation for a restri ction on aircraft movements****, these would impact the significance of impact of the any change in CHG emissions."*

The Inspector has chosen to focus solely on the projected increase in GHG emissions in 2025 from the Permitted to Proposed scenario. The Inspector states this as 0.09%. However, the Inspector has failed to take into account all the Proposed emissions as a whole. GHG emissions were never assessed for the North Runway planning permission in 2007. Therefore, all emissions must be taken into account in line with the definition of '***Future Baseline'*** from the Institute of Environmental Management & Assessment (IEMA) in their guide on '*Assessing Greenhouse Gas Emissions and Evaluating their Significance*':

(https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010056/TR010056-001649-Climate%20Emergency%20Planning%20and%20Policy%20-%20Appendix%20A%20-%20IEMA%20Guide-%20Assessing%20Greenhouse%20Gas%20Emissions%20and%20Evaluating%20their%20Significance,%20Version%202,%20Feb%202022.pdf)

Focusing on 2025 Propos ed,from table 11-6 its GHG emissions of 4,167 ktCO2e equate to:

- **7.6%** of the Projected National Emissions Inventory for 2025 of 54,657 ktCO2e
- **36.6%** of the Future Transport Emissions, 11,390 ktCO2e
- **7.1%** of the annual Carbon Budget 2021-2025

These figures are **Very Significant**

Focusing on 2035 Proposed, from table 11-6 its GHG emissions of 4,187 ktCO2e equate to:

- **10.8%** of the Projected Nationa lEmissions Inventory for 2035 of 38,855 ktCO2e
- **58.7%** of the Future Transport Emissions, 7,127 ktCO2e
- **10.5%** of the annual Carbon Budget 2026-2030

Again, these figures are **Very Significant**

The IEMA guidance states that:

> *"**The crux of significance therefore is not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions rela tive to a comparable baseline consistent with a trajectory towards net zero by 2050.**"*

The guidance further states that a project that follows a '*business-as-usual*' or '*do minimum*' approach and is not compatible with the UK's net zero trajectory or accepted aligned practice or area-based transition targets, **results in a significant adverse effect**.

It is evident that GHG emissions will rise from the implementation of the Relevant Action and does not meet the trajectory of net zero. Therefore, this equates to a significance level of '**major adverse**'.

The IEMA Guidelines draws attention to large scale developments that can affect the Total Carbon Budget. It uses a threshold of 5% of the Carbon Budget to define the magnitude of GHG emissions as Significant. Any project of this size can in itself affect the achievement of the Carbon Budget.

Dublin Airport's contribution in 2025 is projected to be 7.1% for the Proposed Scenario which is **above the 5% threshold**, and is therefore deemed as **Significant**. The Inspector failed to address this threshold from the IEMA guidelines in her draft report.

The conclusion of the inspector in section 13.8.7, therefore, is not in line with the IEMA guidance **and it is incorrect to say that no significant adverse effects are likely on the Climate**:

> *"I have had regard to the latest CAP 2024, the national and sectoral adaption plans and frameworks with regard transportation and aviation and any national climate objectives for the aviation industry and I am satisfied that the Relevant Action will not preclude the achievement of any of these targets and will not have long term significant negative impact on climate change. In coming to this conclusion, the Board will note that I have had regard to international and EU requirements for member states when assessing the impacts of climate change in the aviation sector. I have also had regard to my assessment throughout the EIAR and the Relevant Action and the recommendation for further restrictions to the regulatory condition and Relevant Action for restrictions of ATMs at night.*
>
> *I have considered all the written submissions made in relation to Climate Change and Carbon, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and the EIAR accompanying the application that no significant adverse effect is likely to arise."*

In section 13.20 and 16.2 the Inspector states the proposed development would lead to minor direct and indirect impacts on climate change which is in contrast to the figures provided above which contradict this conclusion:

"Total Annual Green House Gas (CHG) emissions of the Relevant Action is projected to increase in 2025 when compared to the permitted scenario and then decrease in 2035. No specific mitigation measures have been included in the predicted emissions. The decrease in the 2035 is based on a change in forecasted aircraft scheduling which indicates there will be an increase in short-haul night flights modelled in 2035 which will decrease long-haul day flights, leading to lower Continuous Climb Departures (CCD) emissions in the proposed scenario for 2035 when compared to the permitted scenario. The scheduling has not been presented in the documentation. This aside, international aviation towards net zero will ensure the use of climate friendly fuels and having regard to minor differences of aircraft movement increases between the permitted and proposed scenario, the long-term impact on the climate is considered of minor significance".

The Inspector is totally reliant on new scheduling, which is not credulous, based on the assumption that short haul flights will replace long haul flights during the nighttime period. This flies in the face of the daa's plans to expand trans-Atlantic routes. This is now the third attempt by the daa to manipulate the schedules in the EIAR to fudge the carbon emissions. The Inspector is also totally reliant on the acceptance of the Permitted scenarios and ignores all their emissions. And finally, the Inspector is relying on International Aviation to miraculously come up with SAF or other magic solutions to solve the emissions. No evidence has been provided by the Inspector and the Board needs to be aware of this lack of evidence. **The only credible evidence is that the Proposed scenario will lead to a very Significant impact on GHG emissions.**

The figures provided in this chapter show that the daa have failed to properly quantify GHG emissions and failed to assign the significance as '**major adverse**' as per IEMA guidelines. GHG emissions were never assessed in the original EIS from2004 and therefore no significance baseline was established in the 2007 planning permission .Therefore, all effects of Dublin Airport's activities need to be compared, and this results in a **'major adverse'** significance finding.

1.1 EIAR

Chapter 11 of the revised EIAR focuses on Climate and Carbon. Section 11.1.2 quotes the Directive 2014/52/EU:

> *"Climate change will continue to cause damage to the environment and compromise economic development. In this regard, it is appropriate to assess the impact of projects on climate (for example greenhouse gas emissions) and their vulnerability to climate change."*

Annex IV of the Directive, part 5. (f) requires a description of the likely significant effects of the project on the environment resulting from:

> *"(f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change;"*

It further states:

> *"The description of the likely significant effects on the factors specified in Article 3(1) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and **long-term**, permanent and temporary, positive and negative effects of the project. This description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the project."*

The factors specified in Article 3(1) are:

(a) population and human health;

(b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;

(c) land, soil, water, air and climate;

(d) material assets, cultural heritage and the landscape;

(e) the interaction between the factors referred to in points (a) to (d).

Therefore, it is clear that long-term effects of the Relevant Action should be taken into account along with any other past or future projects.

In section 11.2.5 the EIAR refers to the Climate Action and Low Carbon Development Acts 2015 to 2021 and its target to reduce emissions by 51% by 2030 and reach net zero by 2050.

Section 11.2.21 refers to Fingal County Council's Climate Change Action Plan 2019 – 2024 and how the Council "*recognises the Climate Emergency as declared by the Dáil and commits itself in this plan to prioritising mitigation of, and adaptation to, climate change across its functions*".

Section 11.3.6 states that the Permitted Scenario was used as the baseline for the GHG emissions assessment. By using the Permitted Scenario as the baseline, the EIAR is giving the impression that the Permitted Scenario is acceptable. This is not the case as even with the Permitted Scenario, GHG emissions will rise. This conflicts with the Government policies to reduce GHG emissions by 51% by 2030. The baseline should take account of future reduction targets as defined by the Institute of Environmental Management & Assessment (IEMA) definition of '***Future Baseline'*** in their guide on '*Assessing Greenhouse Gas Emissions and Evaluating their Significance*':

(https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010056/TR010056-001649-Climate%20Emergency%20Planning%20and%20Policy%20-%20Appendix%20A%20-%20IEMA%20Guide-%20Assessing%20Greenhouse%20Gas%20Emissions%20and%20Evaluating%20their%20Significance,%20Version%202,%20Feb%202022.pdf)

The IEMA guide refers to three overarching principles that are relevant in considering the aspect of significance for GHG emissions:

> *"1. The GHG emissions from all projects will contribute to climate change, the largest interrelated cumulative environmental effect*
>
> *2. The consequences of a changing climate have the potential to lead to significant environmental effects on all topics in the EIA Directive (e.g. human health, biodiversity, water, land use, air quality)*
>
> *3. GHG emissions have a combined environmental effect that is approaching a scientifically defined environmental limit; as such any GHG emissions or reductions from a project might be considered to be significant*".

This is very relevant in relation to the daa's Relevant Action application that any GHG emissions can be considered significant.

To meet Ireland's reduction targets, Environmental Impact Assessment must give proportionate consideration to whether and how a project will contribute to or jeopardise the achievement of these targets. The IMEA guide states:

> "***The crux of significance therefore is not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050***".

Therefore, when determining significance, it is important to consider the net zero trajectory in line with the Paris Agreement's 1.5°C pathway. Also, the timing of reductions is critical to the cumulative effect of GHG emissions.

The IMEA guide provides in Figure 5 a graphical form of how to determine significance and how the GHG emissions align with the UK's net zero compatible trajectory:

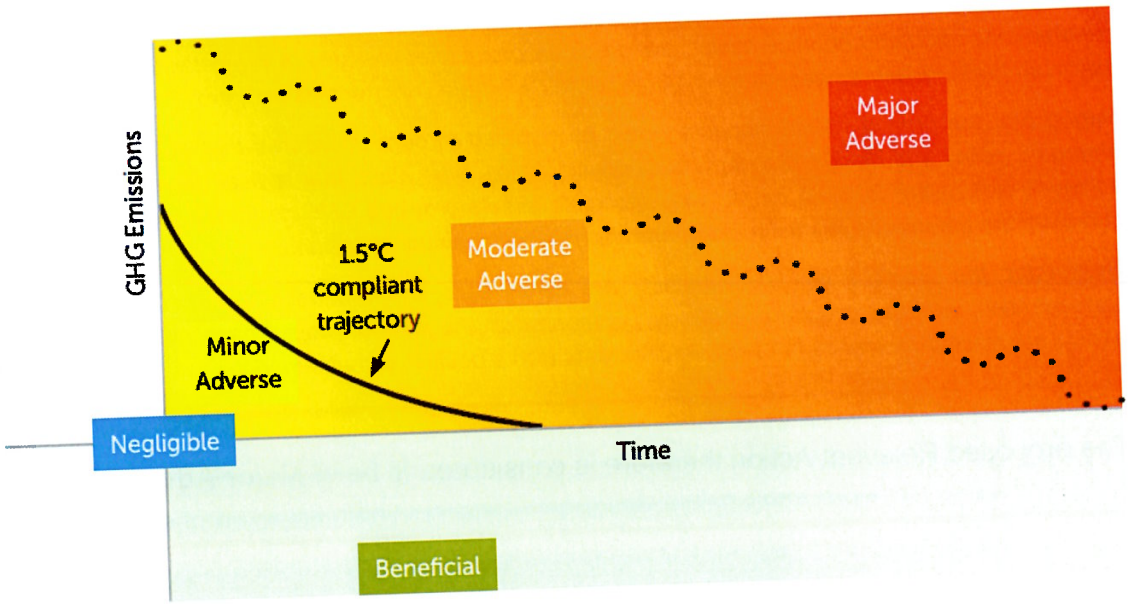


Figure 5: Different levels of significance plotted against the UK's net zero compatible trajectory[36]

The guide states that:

> "*A project that follows a 'business-as-usual' or 'do minimum' approach and is not compatible with the UK's net zero trajectory, or accepted aligned practice or area-based transition targets, results in a* ***significant adverse effect***".

The guide provides examples of significance criteria in Box 3:

Box 3: Examples of significance criteria

For the avoidance of doubt IEMA's position that all emissions contribute to climate change has not changed. This Box 3 provides practitioners with examples of how to distinguish different levels of significance. Major or moderate adverse effects and beneficial effects are ***considered to be significant****. Minor adverse and negligible effects are* ***not considered to be significant****.*

Major adverse: *the project's GHG impacts are not mitigated or are only compliant with do-minimum standards set through regulation, and do not provide further reductions required by existing local and national policy for projects of this type. A project with major adverse effects is locking in emissions and does not make a meaningful contribution to the UK's trajectory towards net zero.*

Moderate adverse*: the project's GHG impacts are partially mitigated and may partially meet the applicable existing and emerging policy requirements but would not fully contribute to decarbonisation in line with local and national policy goals for projects of this type. A project with moderate adverse effects falls short of fully contributing to the UK's trajectory towards net zero.*

Minor adverse: *the project's GHG impacts would be fully consistent with applicable existing and emerging policy requirements and good practice design standards for projects of this type. A project with minor adverse effects is fully in line with measures necessary to achieve the UK's trajectory towards net zero.*

Negligible: *the project's GHG impacts would be reduced through measures that go well beyond existing and emerging policy and design standards for projects of this type, such that radical decarbonisation or net zero is achieved well before 2050. A project with negligible effects provides GHG performance that is well 'ahead of the curve' for the trajectory towards net zero and has minimal residual emissions.*

Beneficial*: the project's net GHG impacts are below zero and it causes a reduction in atmospheric GHG concentration, whether directly or indirectly, compared to the without-project baseline. A project with beneficial effects substantially exceeds net zero requirements with a positive climate impact.*

The proposed Relevant Action therefore is considered to be of **Major Adverse Significance**

1.2 Emissions Data

In section 11.3.17 the report lists the permitted and proposed ATM projections for 2025 and 2035 in Table 11-1. **Note there's an error with the difference between 2035 Permitted and Proposed**. The variation should be 12,000 movements (240,000 minus 228,000 = 12,000).

Table 11-1: Permitted and Proposed Annual ATM Projections for each Assessment Year (000s)

Year	Scenario		
	Permitted	Proposed	Variation
2025	227	240	13
2035	228	240	0

Please also note that the number of movements forecast in 2025 Proposed, 240,000, is larger than the number previously forecast, 236,000. Therefore, this revised application has more aircraft movements and therefore obviously more emissions.

The number of aircraft movements in this significant information submission is different compared to those previously published. In the previous EIAR, table 13-1 was as follows:

Table 13-1: Assessment Years, Scenarios, PAX and ATMs

Assessment Years and Scenarios	Predicted Annual Passengers (PAX) (millions per annum)	Permitted vs Proposed Difference in PAX (millions)	Air Traffic Movements (ATMs) ('000s per annum)	Typical 'Busy Day' Night-Time ATMs (23:00-07:00)
2022 Permitted	19.6	n/a	166	51
2022 Proposed	21.0	1.4	176	82
2025 Permitted	30.4	n/a	227	60
2025 Proposed	32.0	1.6	236	98
2035 Permitted	32.0	n/a	236	60
2035 Proposed	32.0	0.0	236	98

In the latest EIAR table 13-1 has been revised as follows:

Table 13--1: Assessment Years, Scenarios, PAX and ATMs

Assessment Years and Scenarios	Predicted Annual Passengers (PAX) (millions per annum)	Permitted vs Proposed Difference in PAX (millions)	Air Traffic Movements (ATMs) ('000s per annum)	Typical 'Busy Day' Night-Time ATMs (23:00-07:00)
2025 Permitted	31.8	n/a	227	60
2025 Proposed	32.0	0.2	240	114
2035 Permitted	32.0	n/a	22 8	60
2035 Proposed	32.0	00	240	114

2025 Permitted is the same, 2025 Proposed has increased by 4k movements, **2035 Permitted has reduced by 8k movements** and 2035 Proposed has increased by 4k movements. The 8k reduction in 2035 Permitted makes no sense whatsoever and no reason is given. 2035 Permitted is at 32m passengers, the same as 2035 proposed**. It is clear that the 2035 Permitted figure is yet another error.**

The IEMA guidance states that:

> "***The crux of significance therefore is not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050.***"

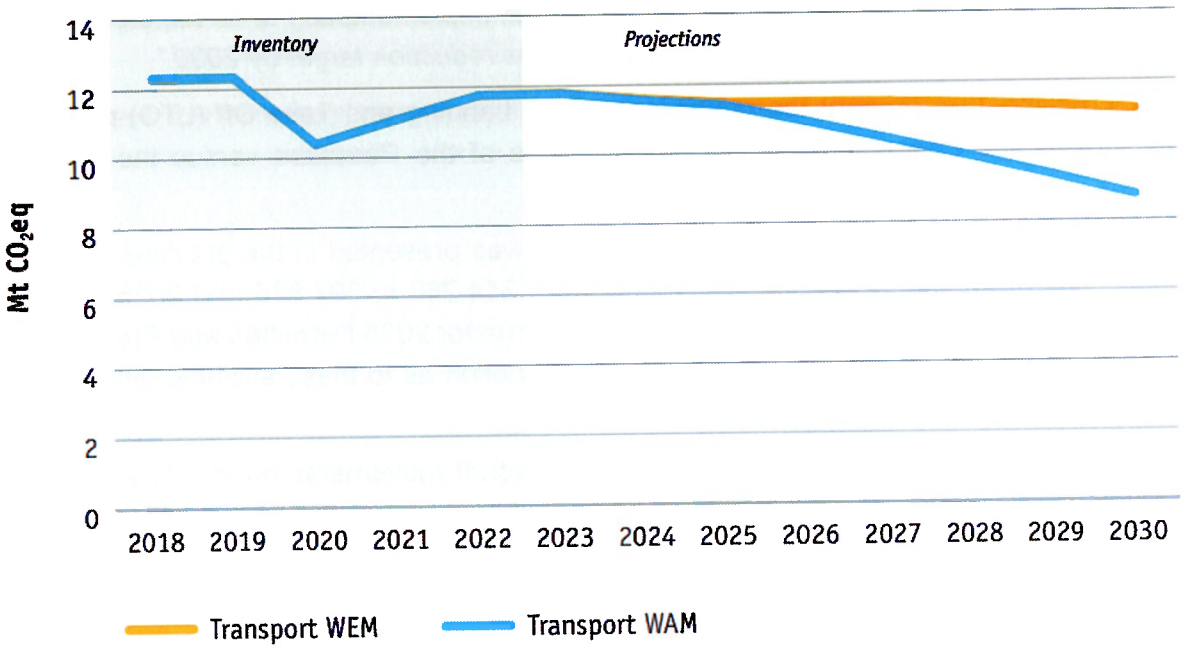
The guidance further states that a project that follows a '*business-as-usual*' or '*do minimum*' approach and is not compatble with the UK's net zero trajectory or accepted aligned practice or area-based transition targets, **results in a significant adverse effect**.

It is evident that GHG emissions will rise from the implementation of the Relevant Action and does not meet the trajectory of net zero. Therefore, this equates to a significance level of '**major adverse'**.

The analysis provided in this submission on the draft decision uses the latest GHG emission projections from the EPA in their May 2024 report (https://www.epa.ie/publications/monitoring--assessment/climate-change/air-emissions/EPA-GHG-Projections-Report-2022-2050-May24--v2.pdf).

In the EPA report, it states that under the '*With Additional Measures*' scenario, Transport emissions are projected to decrease by 26% over the period 2022 to 2030 from 11.8 to 8.7 Mt CO_2 eq.

Figure 10 Greenhouse Gas Emissions Projections from the Transport Sector under the *With Existing Measures* and *With Additional Measures* scenarios out to 2030



Note these projections do not include aviation emissions but these are a good proxy for what the sector should be aspiring to.

The '*With Existing Measures*' scenario forecasts Ireland's emissions including all national policies and measures implemented by the end of 2020. These include measures in the National Development Plan (NDP) and Climate Action Plan 2019.

The '*With Additional Measures*' scenario includes government policies and measures to reduce emissions such as those in Ireland's Climate Action Plan 2021. This was published in November 2021.

The EPA report states in section 4:

> "*The Climate Action and Low Carbon Development (Amendment) Act 2021 sets a national climate objective of achieving a climate resilient and climate neutral economy by the end of the year 2050. An interim target has been set out to achieve a reduction of 51% in total emissions (including LULUCF) over the period 2018 to 2030.*
>
> *The projections show that implemented policies and measures in the With Existing Measures (WEM) scenario can only deliver an 11% reduction in greenhouse gas emissions by 2030 compared to the 2018 level. The WAM scenario, including policies*

and measures from the 2024 Climate Action Plan, is projected to deliver a 29% emissions reduction over the same period.

Both projected scenarios indicate that even with implementation of all climate plans and policies Ireland will not meet the 51% emissions reduction target by 2030.".

Tables 11-3 and 11-4 present the projections of the Landing and Take Off (LTO) phase and Climb, Cruise and Descent phase (CCD) Emissions of the Permitted versus the Proposed scenarios.

What is alarming is the difference in values to what was presented in the previous EIAR. For example, 2025 Permitted LTO emissions jump from 314,268 to 397,835 and 2025 Proposed jumps from 326,482 to 414,489 tCO2e. The same is true for 2035 Permitted and Proposed and for the equivalent CCD emissions. There is no explanation as to these sizeable differences in emissions.

And recall from table 11-1 above, 2025 Permitted aircraft movements have stayed the same while 2025 Proposed movements increased by 4k.

There's no explanation why 2035 Permitted LTO emissions are higher than 2035 Proposed even though there are 12k more movements in the Proposed scenario.

The CCD emissions are just as confusing and non sensical. It is very apparent that these figures cannot be trusted. An 11.43% reduction in 2035 CCD emissions between the Proposed and Permitted scenarios even though the Proposed scenario has 12k more movements.

The Board cannot trust these values and consequently this Relevant Action application must fall, or the Board must get an independent evaluation of the emissions.

Table 11-6 presents the projected total GHG emissions for the Permitted and Proposed scenarios for 2025 and 2035.

Table 11-6: Total Annual GHG Emissions Projections – Permitted vs Proposed Scenarios

Year	Total Annual GHG Emissions (tCO_2e)			
	Permitted	Proposed	Variation	% Variation (permitted to proposed)
2025	4,119,144	4,167,017	47,873	1.16%
2035	4646,010	4, 187,473	-458,537	-9.87%

What stands out is that these figures are far higher than the ones presented in the 2021 EIAR, which are included below for comparison.

The individual figures have increased by nearly 1 million tCO2e, but no explanation has been given as to the significant increases.

Total Annual GHG Emissions (tCO_2e46)

Year	Permitted	Proposed	Variation	% Variation (permitted to proposed)
2025	3,101,502	3,203,276	101,774	3.28%
2035	3,185,352	3,128,361	-56,991	-1.79%

The variation between 2025 Proposed and Permitted has reduced from 101,774 to 47,873 tCO2e. And as a result, the % variation also reduces from 3.28% to 1.16%.

There is no explanation given as to the significant change in GHG emissions. The number of ATMs has only increased by 4k movements in 2025 Proposed in the significant information request. That is just a 1.7% increase in ATMs. That does not account for the one third increase in GHG emissions. Without an explanation, these figures cannot be verified or trusted. Alarm bells should be going off with such a change in GHG emissions. It is very evident that the figures do not stack up in comparison to the figures given in the 2021 EIAR.

The analysis in the Climate chapter focuses only on the variation in GHG emissions between the Proposed and Permitted Scenarios. But from the IEMA guidelines all GHG emissions need to be assessed.

A good proxy is the Projected National Emissions Inventory compiled by the EPA:

https://www.epa.ie/publications/monitoring--assessment/climate-change/air-emissions/Irelands_2024_GHG_Emission_Projections_2023-2050_incLULUCF.xlsx

Year	Projected National Emissions Inventory (kt CO_2e)
2022	60605
2025	54657
2035	38855

Focusing on 2025 Proposed, from table 11-6 ts GHG emissions of 4,167 ktCO2e equate to **7.6%** of the Projected National Emissions Inventory for 2025 of 54,657 ktCO2e, which is **very significant**.

For 2035 Proposed, its GHG emissions of 4,187 ktCO2e equates to **10.8%** of the Projected National Emissions Inventory for 2035 of 38,855 ktCO2e, which again is **very significant**.

In table 11-8 the GHG emissions are compared against the Future Transport Emissions Inventory.

Table 11-8: GHG Emissions Against Future Transport Emissions Inventory Scenarios

Year	Additional Annual GHG Emissions (kt CO_2e)	Projected National Emissions Inventory (kt CO_2e)	Emissions as a % of National Emissions Inventory
2025	101.8	12,490	0.81%
2035	-57.0	11,000	-0.52%

The figures of 12,490 for 2025 and 11,000 for 2035 are **incorrect** and are from Ireland's Greenhouse Gas Emissions Projections 2018-2040 published in 2019, https://www.epa.ie/publications/monitoring--assessment/climate-change/air-emissions/Ireland_2019_GHG_Emission_Projections_2018-2040.xlsx, and not the more recent 2024 publication, https://www.epa.ie/publications/monitoring--assessment/climate-change/air-emissions/Irelands_2024_GHG_Emission_Projections_2023-2050_incLULUCF.xlsx.

The correct figure for 2025 is 11,390 and 7,127 for 2035 .

In fact, all the figures for table 11-8 are incorrect. This table is the exact same as table 11-8 in the 2021 EIAR.

Total emissions in 2025 Proposed are 4,167 ktCO2e which is **36.6%** of the Future Transport Emissions, 11,390.

Total emissions in 2035 Proposed are 4,187 ktCO2e which is **58.7%** of the Future Transport Emissions, 7,127 .

These total emissions **are highly significant** and highlights how aviation compares to all other forms of transport.

It has been impossible to quantify the variation in GHG emissions between the Proposed and Permitted scenarios for 2025 and 2035 as the figures are not reliable. The onus is on the Board

to independently interrogate the daa's schedules and have the GHG figures recalculated and restated. The figures cannot be trusted for the reasons given.

The applicant attempts to assess the GHG emissions in relation to the net zero trajectory. It only focuses on the variation between the Proposed and Permitted scenarios. The Permitted figures cannot be trusted. Therefore, the overall trajectory of the Proposed scenario cannot be properly assessed.

1.3 Large Scale Developments

In section 6.3 of the IEMA Guidelines special attention is drawn to large scale developments:

> *"that in themselves have magnitudes of GHG emissions that materially affect the UK's or a devolved administration's total carbon budget".*

It further states that:

> *"An indicative threshold of **5%** of the UK or devolved administration carbon budget in the applicable time period is proposed, at which the magnitude of GHG emissions irrespective of any reductions is likely to be **significant**. A project that meets this threshold can in itself materially affect achievement of the carbon budget."*

Dublin Airport clearly falls under the category of large-scale development. In section 12.9 of this report, we show how Dublin Airport is Ireland's number 1 Carbon emitter according to https://climatetrace.org/.

Section 6.4 of the IEMA's Guidelines discusses how to contextualise a project's carbon footprint. Figure 6 provides examples of good practice approaches:

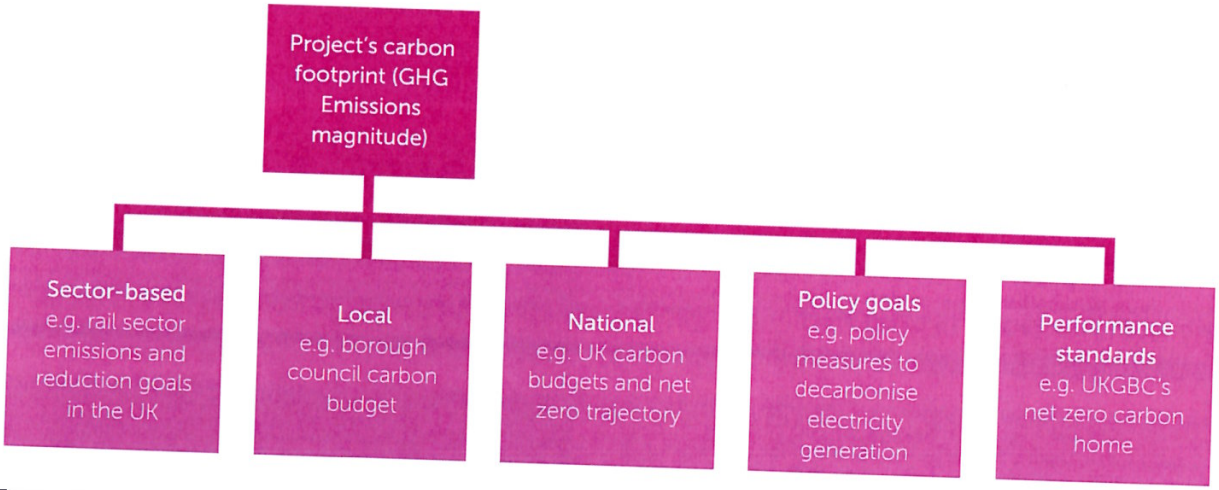


Figure 6 Good practice approaches for contextualising a project's GHG emissions

One approach is the use of the UK's Carbon Budget and Net Zero Trajectory. We used this method for Dublin Airport and compared all emissions from the 2025 and 2035 Proposed scenarios to Ireland's annual Carbon Budgets.

Carbon Budget	Total Budget (MTCO2e)	Annual Budget (MTCO2e)	2025 & 2035 Proposed (MTCO2e)	% Contribution of Proposed Scenario
2021-2025	295	59	4.167	**7.1%**
2026-2030	200	40	4.187	**10.5%**

The analysis shows that the 2025 Proposed scenario equates to 7.1% of Ireland's annual Carbon Budget and 2035 Proposed equates to 10.5%

As stated by the IEMA, all emissions can be considered significant. The cumulative effect of all emissions at Dublin Airport due to all aircraft movements are significant and above the IEMA's 5% threshold.

1.4 SEAI Report

A new report was published in 2024 by the SEAI, https://www.seai.ie/sites/default/files/publications/energy-in-ireland-2024.pdf. It estimated that:

> *"Ireland's emissions from International aviation amounted to 3.4 MtCO2eq, equivalent to approximately 11% of national energy-related emissions."*

Table 7.1: Energy-related CO_2eq by sector (share)

GHG [$MtCO_2eq$]	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Electricity generation	11.70	11.53	12.13	12.86	12.05	10.70	9.45	8.86	10.36	10.14	8.03
Transport (excl. int. aviation)	10.92	11.20	11.69	12.21	12.05	12.22	12.22	10.29	10.97	11.64	11.68
Industry	3.39	3.61	3.59	3.71	3.83	4.05	3.97	4.02	4.04	3.81	3.62
Residential	7.07	6.27	6.71	7.00	6.51	7.00	6.73	7.34	6.87	5.75	5.35
Services	1.50	1.41	1.54	1.45	1.39	1.51	1.50	1.31	1.41	1.39	1.35
Agriculture	0.59	0.53	0.51	0.54	0.55	0.59	0.61	0.62	0.62	0.85	0.76
Fisheries	0.08	0.07	0.07	0.06	0.07	0.08	0.07	0.06	0.06	0.05	0.06
Other	0.48	0.44	0.53	0.42	0.47	0.52	0.46	0.48	0.47	0.47	0.42
Total (excl. int. aviation)	**35.72**	**35.06**	**36.77**	**38.24**	**36.92**	**36.67**	**35.02**	**32.99**	**34.79**	**34.11**	**31.27**
International aviation	2.02	2.24	2.54	2.60	3.06	3.31	3.34	1.19	1.32	3.04	3.44
Total (incl. int. aviation)	**37.74**	**37.30**	**39.30**	**40.84**	**39.98**	**39.98**	**38.36**	**34.17**	**36.12**	**37.15**	**34.71**

It also showed that Jet kerosene contributed 22.8% of energy related CO2 emission in transport:

Table 7.3: Quantities and shares of energy-related CO_2eq emissions in transport (share)

GHG [MtCO_2eq]	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Diesel / gasoil	7.34 (56.6%)	7.80 (58.0%)	8.46 (59.4%)	9.16 (61.7%)	9.29 (61.4%)	9.69 (62.3%)	9.82 (63.0%)	8.50 (73.9%)	9.07 (73.5%)	9.48 (64.2%)	9.38 (61.7%)
Jet kerosene	2.03 (15.7%)	2.25 (16.7%)	2.55 (17.9%)	2.61 (17.6%)	3.07 (20.3%)	3.32 (21.4%)	3.36 (21.5%)	1.20 (10.4%)	1.34 (10.9%)	3.06 (20.8%)	3.46 (22.8%)
Gasoline	3.54 (27.3%)	3.35 (24.9%)	3.17 (22.3%)	2.96 (20.0%)	2.67 (17.6%)	2.43 (15.6%)	2.30 (14.8%)	1.70 (14.8%)	1.81 (14.6%)	2.06 (13.9%)	2.19 (14.4%)
Electricity	0.02 (0.2%)	0.02 (0.1%)	0.02 (0.1%)	0.02 (0.2%)	0.02 (0.2%)	0.03 (0.2%)	0.03 (0.2%)	0.03 (0.3%)	0.05 (0.4%)	0.07 (0.5%)	0.08 (0.5%)
Biodiesel	0.01 (0.1%)	0.02 (0.1%)	0.02 (0.1%)	0.02 (0.1%)	0.03 (0.2%)	0.03 (0.2%)	0.03 (0.2%)	0.03 (0.3%)	0.03 (0.3%)	0.04 (0.3%)	0.05 (0.3%)
Natural gas	0.01 (0.1%)	0.01 (0.1%)	0.01 (0.1%)	0.05 (0.3%)	0.05 (0.3%)	0.05 (0.3%)	0.04 (0.3%)	0.04 (0.3%)	0.04 (0.3%)	0.04 (0.3%)	0.04 (0.2%)
LPG	0.00 (0.0%)	0.01 (0.0%)	0.01 (0.0%)	0.01 (0.0%)	0.01 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)
Bioethanol	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)
Fuel oil	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)
Total	**12.96** (100%)	**13.46** (100%)	**14.24** (100%)	**14.83** (100%)	**15.14** (100%)	**15.55** (100%)	**15.59** (100%)	**11.51** (100%)	**12.35** (100%)	**14.76** (100%)	**15.20** (100%)

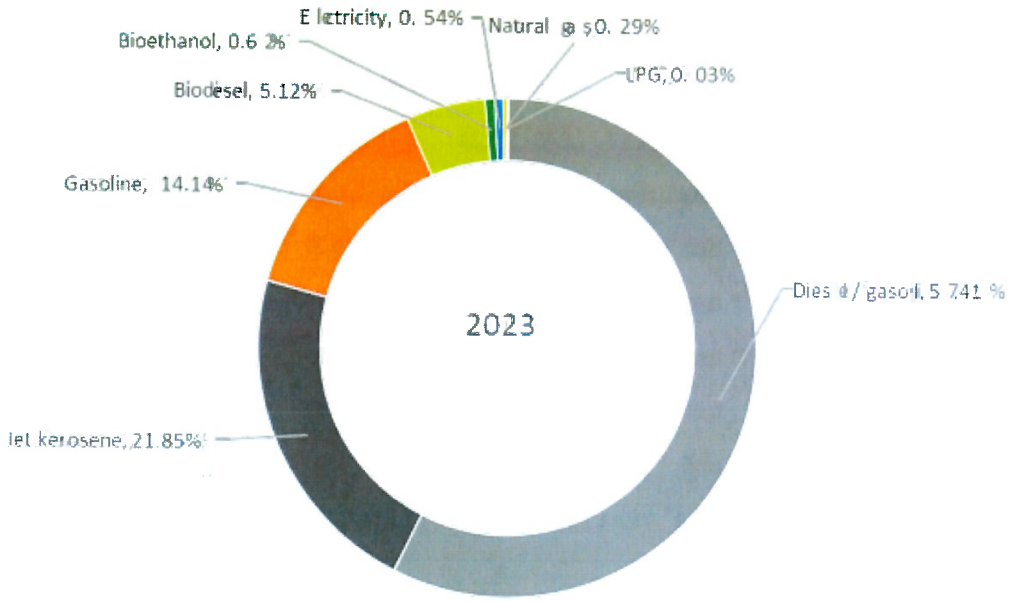
Jet Kerosene use in 2023 surpassed the previous yearly high in 2019:

Table 5.4: Final energy in transport sector by energy types (share)

Energy [TWh]	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Diesel / gasoil	27.50 (54.4%)	29.25 (55.6%)	31.72 (57.0%)	34.32 (59.4%)	34.80 (58.6%)	36.31 (59.6%)	36.80 (60.0%)	31.83 (69.9%)	33.98 (69.7%)	35.50 (60.7%)	35.10 (57.4%)
Jet kerosene	7.85 (15.5%)	8.70 (16.5%)	9.84 (17.7%)	10.10 (17.5%)	11.88 (20.0%)	12.83 (21.1%)	12.98 (21.1%)	4.63 (10.2%)	5.18 (10.6%)	11.84 (20.2%)	13.36 (21.8%)
Gasoline	13.93 (27.5%)	13.18 (25.1%)	12.50 (22.4%)	11.66 (20.2%)	10.52 (17.7%)	9.59 (15.7%)	9.08 (14.8%)	6.73 (14.8%)	7.13 (14.6%)	8.12 (13.9%)	8.65 (14.1%)
Biodiesel	0.86 (1.7%)	1.04 (2.0%)	1.14 (2.1%)	1.00 (1.7%)	1.52 (2.6%)	1.48 (2.4%)	1.90 (3.1%)	1.82 (4.0%)	1.87 (3.8%)	2.37 (4.1%)	3.13 (5.1%)
Bioethanol	0.33 (0.7%)	0.31 (0.6%)	0.35 (0.6%)	0.38 (0.7%)	0.34 (0.6%)	0.32 (0.5%)	0.30 (0.5%)	0.23 (0.5%)	0.24 (0.5%)	0.27 (0.5%)	0.38 (0.6%)
Electricity	0.04 (0.1%)	0.04 (0.1%)	0.04 (0.1%)	0.05 (0.1%)	0.05 (0.1%)	0.07 (0.1%)	0.09 (0.1%)	0.10 (0.2%)	0.15 (0.3%)	0.22 (0.4%)	0.33 (0.5%)
Natural gas	0.04 (0.1%)	0.03 (0.1%)	0.05 (0.1%)	0.25 (0.4%)	0.24 (0.4%)	0.26 (0.4%)	0.20 (0.3%)	0.18 (0.4%)	0.19 (0.4%)	0.19 (0.3%)	0.18 (0.3%)
LPG	0.02 (0.0%)	0.02 (0.0%)	0.03 (0.1%)	0.03 (0.1%)	0.03 (0.0%)	0.02 (0.0%)	0.02 (0.0%)	0.01 (0.0%)	0.01 (0.0%)	0.02 (0.0%)	0.02 (0.0%)
Fuel oil	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Total	**50.57** (100%)	**52.58** (100%)	**55.67** (100%)	**57.79** (100%)	**59.38** (100%)	**60.87** (100%)	**61.36** (100%)	**45.53** (100%)	**48.74** (100%)	**58.53** (100%)	**61.14** (100%)

Jet Kerosene accounted for 21.85% of all transport energy use:

Figure 5.7 Shares of energy types in transport final energy



It's imperative that these highly significant GHG emissions from aviation are kept in line with Ireland's obligation under the Paris Agreement.

As stated by the IEMA, all emissions can be considered significant. The cumulative effect of all emissions at Dublin Airport due to all aircraft movements are significant and above the IEMA's 5% threshold, as shown here by the SEAI. Dublin Airport is Ireland's number 1 emitter of GHG emissions when emissions from airlines are included, and they must be highlighted as 'Very Significant'. Any alternative makes a mockery of Ireland's duties to reduce carbon emissions. If the number 1 emitter of GHG emissions isn't designated as Very Significant' then there are serious questions to ask about the Board's expertise on Climate.

1.5 Presentation from UCC (MaREI) to Engineer's Ireland

On December 17th 2024, the Energy Policy and Modelling Group from UCC showcased their work at an event hosted by Engineers Ireland, https://www.marei.ie/energy-policy-and-modelling-group-ucc-research-showcasing-event/. A presentation by Dr Vahid Aryanpur provided some interesting highlights on aviation and its impact on emissions.Dr Aryanpur's presentation can be accessed at https://www.linkedin.com/feed/update/urn:li:activity:7275083113133707266/.

Dr Aryanpur highlighted key metrics in aviation in Ireland from 2013 to 2023:

What's happening? (Departure flights 2013-2023)

1. Air travel demand takes off by 68%, reaching 32 billion passenger-kilometres
2. Short-range flights climb by 29%, medium and long-range soar by over 70%
3. Occupied seats increase by 4-24%
4. Air travel per capita in Ireland is twice the EU average (the gap grows)
5. Irish air passengers fly further & further than 10 years ago

He also highlighted possible future pathways:

Future Flight Pathways

🚨 Fossil fuel reliance scenarios:

Cumulatively emit over 100 Mt CO_2, consuming 30%+ of Ireland's carbon budget—equal to the entire road transport budget!

⚠️ ReFuelEU scenarios:

Cleaner fuels could help reduce emissions but still consume 20% of the total carbon budget!

Zero-emission fuel solutions face significant feasibility issues

The Key Takeaways from the presentation:

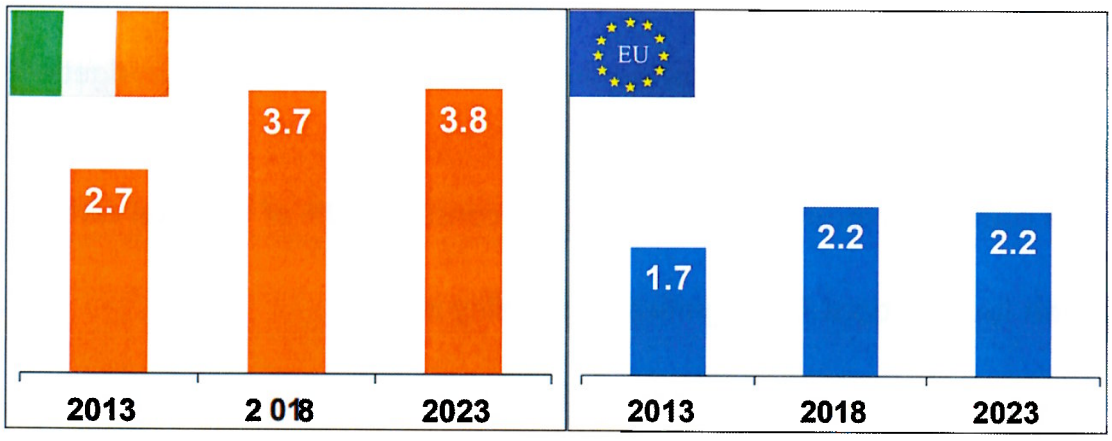
Ireland's international aviation accounts for

- 9% of total final e rergy consumption
- 11% oftotal energy-relatedCO $_2$em issions
- 20% of oil imports Future pathway (2050)
- Aviation emissions could consume 19% to 40% of Ireland's total carbon budget
- A low-demand scenario can cut aviation fuel use by one-third compared to BAU Risks and concerns
- Aviation emissions threate nto disproportionately deplete Ireland's carbon budget ▪ Decarbonisation pathways based on zero emission fuels face significant feasibility issues
- Aviation remains a blind spot i nIreland's climate goals

These figures back up the SEAI figures and show that aviation emissions amount to 11% of total energy-related CO2 emissions. Therefore, as per the IEMA guidelines this must be categorised as ***'Very Significant'*** as it's above the 5% threshold.

The presentation also compared average trips per capita in Ireland vs the EU:

Average trips per capita in Ireland & the EU



- Air travel trips per capita is higher than the EU (~double)
- Gap over the EU grew from 1.0 to 1.6 trips per capita

1.6 Mott MacDonald's revised schedules

In section 11.7.2 it states that the reduction in nighttime flights will fall mainly on the home-based carriers and affect short haul flights primarily. But it further states that the short haul flights that are removed from the night schedule are expected to be replaced with long haul flights during the day. There is no evidence in any of the data submitted by the daa to back up this statement. This is a critical part of the revised Climate chapter, and this acceptance has a significant impact on the emissions reported.

> Assessment of Significance of Effects
>
> 11.7.2 In 2025, under the Proposed Scenario, an increase in flights is expected to lead to an increase in GHG emissions compared to the Permitted Scenario. However, in 2035, a decrease in emissions is expected between the Permitted and Proposed Scenarios. While there are the same number of flights in each scenario, some of the short-haul night flights that have been modelled as part of the Proposed Scenario do not occur under the Permitted Scenario (as per the Mott McDonald Impact of the Operating Restrictions Report which concludes that Permitted Scenario has a disproportionate impact on the base carriers with mostly short haul flights being affected) and are expected to be replaced with long-haul day flights, therefore leading to increased CCD emissions under the Permitted Scenario. This increase in short-haul flights and decrease in long-haul flights under the Proposed Scenario for 2035 (relative to the Permitted Scenario) results in lower CCD emissions associated with these flights.

The Board cannot rely on a comment like this and must interrogate the daa's forecasts and satisfy themselves on where a sizeable number of new long-haul flights are going to come from.

The Mott MacDonald report from the revised 2021 EIAR shows that up to 51 nighttime flights will be lost due to the Permitted Scenario in 2025. These will include some long-haul flights but will primarily be short haul.

Dublin Baseline Night Movement Allocation

Carrier	Flight Type	2025 Demand	2025 Allocation	Reduction	
Aer Lingus	Pax Scheduled	41	21	-49%	
Ryanair	Pax Scheduled	47	23	-51%	
Stobart	Pax Scheduled	2	0	-100%	* Minor retime
Air Moldova	Pax Scheduled	1	1	0%	
Aegean	Pax Scheduled	2	1	-50%	
Air France	Pax Scheduled	1	1	0%	
Cathay Pacific	Pax Scheduled	1	0	-100%	* New after 2022
Ethiopian Airlines	Pax Scheduled	4	3	-25%	
KLM	Pax Scheduled	1	1	0%	
Lufthansa	Pax Scheduled	3	2	-33%	
Aeroflot	Pax Scheduled	1	1	0%	
United Airlines	Pax Scheduled	1	0	-100%	* 10min retime
Tomsonfly	Pax Charter	2	2	0%	
TNT	Cargo	1	1	0%	
Bluebird Cargo	Cargo	1	1	0%	
FedEx	Cargo	1	1	0%	
DHL	Cargo	2	2	0%	* Retime not possible
UPS	Cargo	2	2	0%	* Retime not possible
XM Cargo	Cargo	2	2	0%	* Retime not possible
Total		**116**	**65**	**-44%**	
GA/Positioning		5			
Total		**121**			

The updated Mott MacDonald report lists the number of short hau land long-haul movements for 2019, 2025 Proposed and 2025 Permitte d(constrained).

Dublin ForecastN ight Movene ntDemand 23:00 – 07:00(based on busy day schedules)

Flight Type	2019	2025	Constrained
Pax S cheduled	101	103	59
Short haul	*84*	*87*	*50*
Long haul	*17*	*16*	*9*
Pax Charter	3	2	0
Cargo	9	24	6
Sc heduledsub-total	**113**	**129**	**65**
Other	3	4	0
Total	**116**	**133**	**65**

It highlights that 7 long-haul movements will be lost between 2025 Proposed and 2025 Permitted. This is a significant number of long-haul fl ights, and this reduction would have a significant impact on lowering the emissions for2025 Permitted compared to 2025 Proposed. Yet the daa is trying to argue that there will be more long-haul flights in the Permitted scenario leading to higher emissions.

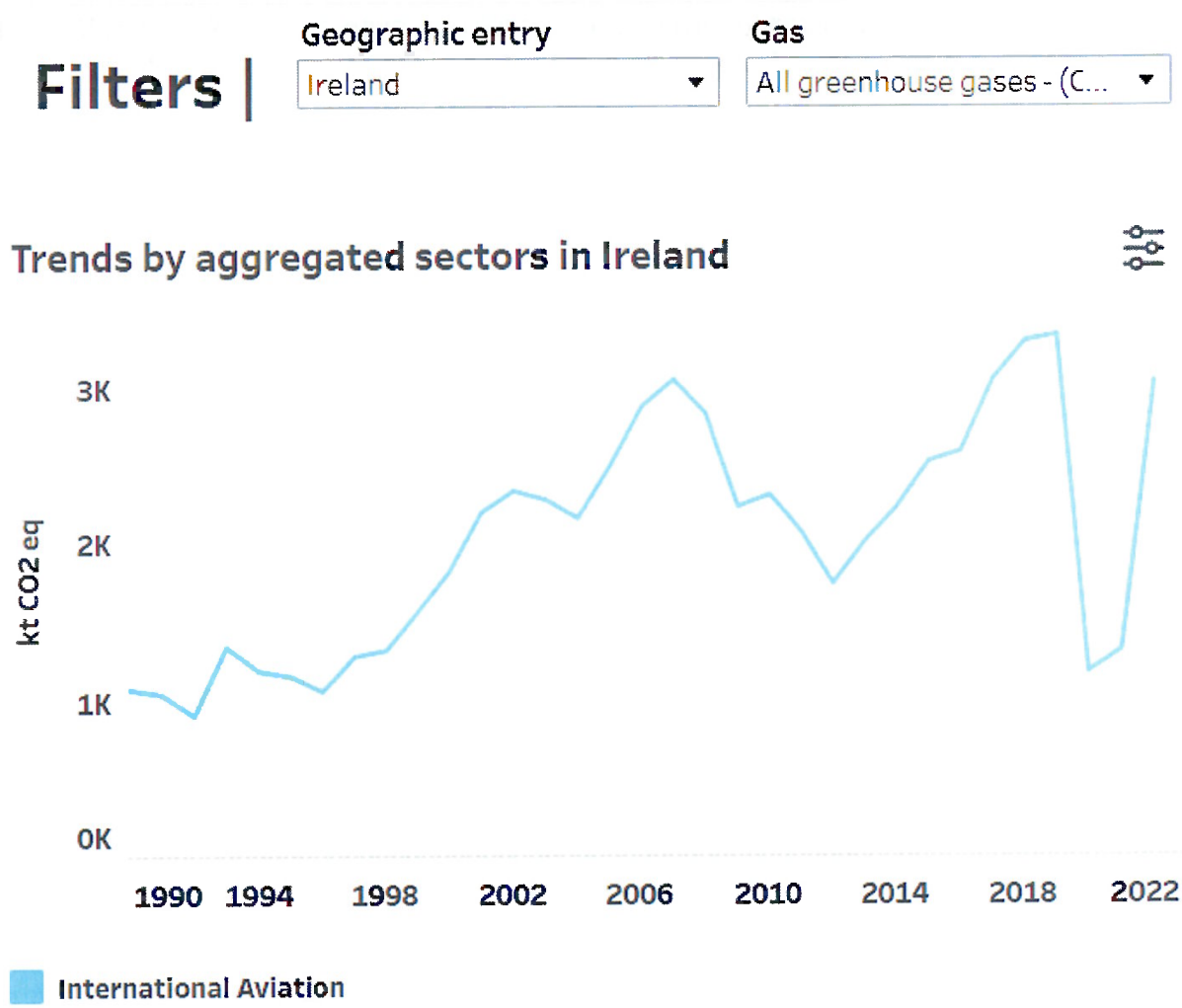
Another important point made in the September 2021 Mott MacDonald report is the pattern of demand for flights. It states that long haul a rivals are concentrated in the early morning period and departures from mid-morning to early afternoon .

- Long haul arr ivals are concentrated in the morning period, with an early peak in the 05.00 hour and a broade rpeak around 08:00. De partues a respread from the mid-morning toearly afternoon . This patte rnof demand is ty pical of transatlantic serv ices, where evening departures from North Ame rica fly overnight to arrive in DUB in the morning. Arrival times in DUB te nd to be e arlier than at other Europe an airports due to Ireland's close proximity to North Ame rica and itstime zone being 1hea rlier than Central European T ime

Therefore, the demand is for long haul arrivals in early morning and departures from mid-morning. This contradicts the statement in section 11.7.2 that short haul flights are expected to be replaced with long haul day flights. Therefore, this expectation of more long-haul day flights is pure fiction, with the intention of distorting the GHG emission figures. The Board should reject this application on the grounds of deceitful manipulation of the GHG figures. None of the figures can be trusted.

1.7 EEA Dashboard

The European Environment Agency (EEA) provide a dashboard for viewing GHG gases (https://www.eea.europa.eu/data-and-maps/data/data-viewers/greenhouse-gases-viewer).



It is evident that Ireland's aviation emissions reached a new peak in 2019 at 3,344 kt CO2eq, having peaked previously in 2007. Using the data from the EEA dashboard, emissions from International Aviation rose from 1,751 to 3,344 $ktCO_2e$ from 2012 to 2019, an 100% rise in emissions in that 7-year period.

Domestic Transport increased from 10,825 to 12,197 $ktCO_2e$, which is an increase in absolute emissions of 1,372 $ktCO_2e$, equivalent to a 12.7% rise in emissions.

This highlights that International Aviation emissions grew 100% from 2012 to 2019 compared to a 12.7% rise in Domestic Transport emissions.

The data proves that International Aviation emissions attributed to Ireland were increasing at an alarming rate pre Covid and needs to be addressed immediately if we are to meet the net zero target by 2050.

The Relevant Action will increase these GHG emissions even further and therefore these emissions have a significance of '***major adverse***' as per the IEMA guidelines.

1.8 Climate Change Advisory Council

The Climate Change Advisory Council (CCAC) is an independent advisory body tasked with assessing and advising on how Ireland can achieve the transition to climate-resilient biodiversity-rich, environmentally sustainable and climate-neutral economy. The Council works to provide contributions in critiquing, informing and shaping Ireland's response to climate change.

The Council also has a Carbon Budgets Working Group tasked:

> *"with assisting and advising the Council in development of a methodology and evidence base for carbon budget proposals, in particular to provide modelling and analytical support for the development of carbon budget proposals. The Carbon Budgets Working Group will provide the Council with key findings, recommendations and outputs for consideration in the context of the Council's role in submitting carbon budget proposals to Government for the finalisation of Carbon Budget 3 from 2031-35 and a proposal for Carbon Budget 4 from 2036-40, which are due by the end of 2024".*

The Council published a Working Paper on their website, Working Paper No. 25, dated December 2023, titled "*Carbon Budgeting in Selected Countries*".

In the Executive summary under 'Blind spots' it references the current exclusion of aviation emissions from Carbon Budgets:

> *"National level carbon budgets are devised by calculating a share of the remaining global carbon budget, and make implicit judgments regarding responsibility for historical emissions based on a given temporal range. Modelling parameters that are used to devise mitigation pathways also include important assumptions about risk, climate feedbacks, the cost of damages and the relative cost of inaction. These choices inevitably determine the scope and temporal range of the chosen carbon budget. Other potential 'blind spots' in carbon budgeting include the inclusion of large-scale negative emissions or carbon dioxide removal technologies,* ***the exclusion of aviation****, shipping and non-territorial emissions from carbon budgets, or assumptions about future offshore mitigation potential.* ***If aviation and shipping emissions, along with other non-territorial or consumption emissions, are not properly reported and accounted for in the carbon budgeting process, and strategies put in place to address them, they may evade scrutiny or mitigation planning****. Of particular relevance to Ireland is the ongoing debate about whether to use a different metric for methane, a potent greenhouse gas with a shorter lifetime than CO2. If non-CO2 mitigation contributions are not fully implemented in a timely manner, this affects the timing of reaching net-zero*

CO2 which must occur much sooner. The literature reviewed argues in favour of including all GHGs in carbon budgets as CO2 equivalent."

In the 'Conclusions and lessons learned' section it highlights a number of important lessons to be learned from other countries:

> ***"Aviation and shipping emissions should be reported transparently and mitigation strategies for these sectors included in the annual Climate Action Plan. Non-territorial emissions should be reported on an annual basis by the EPA or the Council."***

Further on page 18 it states:

> ***"It is particularly striking that Ireland, with such a large (international) aviation sector, has no climate policy in respect of aviation emissions, a point which has been criticised by a number of civil society organisations and researchers. As Cormac O Raifeartaigh noted in 2022, the emissions associated with a return flight from Dublin to New York are not counted in the national emissions budget of either country. For this reason, there is little incentive for nations to reduce emissions associated with international flights.***
>
> ***Until aviation and shipping emissions, along with other non-territorial or consumption emissions, are properly reported and accounted for in the carbon budgeting process, and strategies put in place to address them, they will simply evade political scrutiny or mitigation efforts. According to the Climate Action Tracker website, aviation emissions should decrease by 90% by 2050, compared to present. Of the countries considered in this study, only France has implemented a clear policy to reduce aviation emissions by banning short-haul domestic flights if the journey can be completed in less than 2.5 hours by rail. The Dutch government has recently secured a legal ruling allowing it to implement a lower cap on the annual number of flights at Schipol airport from 500,000 to 460,000. By contrast, Ireland's Climate Action Plan 2023 does not include any measures for the aviation sector aside from a post-2030 commitment to promote sustainable aviation fuels. The Dublin Airport Authority is proceeding with its plans to get planning approval to increase the numbers of passengers it can accommodate annually from 32 million to 40 million."***

Dublin Airport is on target to handle over 33m passengers in 2023. A comparable year in terms of passenger numbers is 2019 when 32.9m passengers travelled through Dublin Airport

Using the EEA dashboard, the GHG emissions for 2019 amounted to 3,344 kt CO_2e. This figure is in line with the emission figures given by the daa in their 2021 EIAR:

Total Annual GHG Emissions (tCO_2e46)

Year	Permitted	Proposed	Variation	% Variation (permitted to proposed)
2025	3,101,502	3,203,276	101,774	3.28%
2035	3,185,352	3,128,361	-56,991	-1.79%

But the EEA figure is in contrast to the new figures published in the latest revised EIAR Supplement submitted as part of the significant information request:

Table 11-6:Total Annual GHG Emissions Projections – Permitted vs Proposed Scenarios

Total Annual GHG Emissions (tCO_2e)

Year	Permitted	Proposed	Variation	% Variation (permitted to proposed)
2025	4,119,144	4,167,017	47,873	1.16%
2035	4,646,010	4,187,473	-458,537	-9.87%

This is further damning evidence that the daa's revised figures cannot be trusted.

Another flaw with the daa's GHG emission calculations is that the 2025 and 2035 scenarios are assessed based on the passenger cap of 32m. The assessment has failed to take into account Government Policy to increase passenger numbers and is therefore not compliant with EIAR

legislation and guidelines. Dublin Airport is on course to handle 33.2m passenger in 20 23.The daa lodged a planning application in 2019 (F19A/0449) to increase passenger nu mbers from 32 mto 35m but withdrew this application in 2020 when Covid struck. Future scenarios should be included in AA screening and assessment.

The daa have also formally announced a new 40m passenger planning application to be lodged before the end of 2023. Details are available at *https://dublinairport.exhibition.app/*.

From the daa's forecasts submitted to ANCA in their reporting template, 39.5m passengers (273180 movements) are forecast in 2035 with the cap removed for the Permitted scenario and 43.4 m passengers (298614 movements) are forecast in 2035 with the cap removed for the Proposed scenario. Based on these movements with the 32m passenger cap removed, **25,434 additional movements are expected in 2035** with the Relevant Action.

Using the 2040 forecasts in the ANCA reporting template and the scenarios without the 32m cap, 317926 movements are forecast for the Proposed scenario and 288512 movements for the Permitted scenario, **resulting in an additional 29414 movements** with the Relevant Action.

Combining the 2035 and 2040 scenarios with the cap removed together with the revised figures from the daa for the scenarios limited to 32m:

Year	Permitted	Pro posed	Variation	% Increase
2025	227 000	240 ,000	13 ,000	**5.7%**
2035 (with cap)	228000	240,000	1 2000	**5.3%**
2035 (no cap)	273,180	298 ,614	**25 ,434**	**9 .3%**
2040 (no cap)	288,512	317 ,926	**29 ,414**	**10.2%**

The % increase in ATMs between the Proposed and Per mitted scenarios acts as a good proxy for the % increase in annual GHG emissions shown in table 11-6.

1.9 Paris Agreement

The NGO Transport & Environment (T&E) commissioned a legal opinion highlighting that Shipping and Aviation are subject to the Paris Agreement:

https://www.transportenvironment.org/discover/shipping-and-aviation-are-subject-to-the-paris-agreement-legal-analysis-shows/

Ireland has excluded shipping and aviation from its first two Carbon Budgets but that does not absolve the responsibility to take these emissions into account in line with the Paris Agreement.

T&E commissioned a legal briefing that shows that shipping and aviation are included. Unlike the Kyoto Protocol, the central pillar of the Paris Agreement is a temperature goal. Signatories of the agreement are obligated to implement "*economy-wide absolute emission reduction targets*", that is, to control anthropogenic emissions so that global warming is limited to well below 2°C and preferably stays within the limit of 1.5°C. A failure to address all anthropogenic emissions, including shipping and aviation, would violate the central aim of the Agreement.

T&E provide a link to the legal advice:

https://www.transportenvironment.org/wp-content/uploads/2021/10/Re-Aviation-Shipping-NDC-UPDATED-Legal-Advice-Final-3-5-21-corr-1.pdf

as well as a legal briefing:

https://www.transportenvironment.org/wp-content/uploads/2021/10/Briefing-paper-NDCs-legal-advice-Aviation-Shipping-Final-2021-2.pdf

The briefing argues that shipping and aviation are clearly subject to the obligations of the Paris Agreement and must be included in Nationally Determined Contributions (NDCs) of signatories. It is the obligation of the signatories to ensure emissions are in line with the temperature goals of the Paris Agreement and this obligation cannot be handed over to international offsetting organisations.

The briefing states that:

> "*The European Union already includes outgoing aviation emissions in its NDC. The UK has recently included international transport emissions in its carbon budget, demonstrating that states are realising their legal responsibilities in regards to these emissions.*"

T&E report on the UK's decision to include shipping and aviation emissions in their NDCs:

https://www.transportenvironment.org/discover/uk-closes-loophole-plane-and-ship-emissions-carbon-budget/

Unfortunately, Ireland is a laggard in this regard. However, shipping and international aviation emissions are not excluded from Ireland's third Carbon. Therefore, it's imperative that they are added and accounted for .

The legal briefing concludes:

> *"The legal advice is clear: Parties must report all emissions from shipping and aviation in their NDCs."*
>
> *"There is no legal basis for excluding them."*

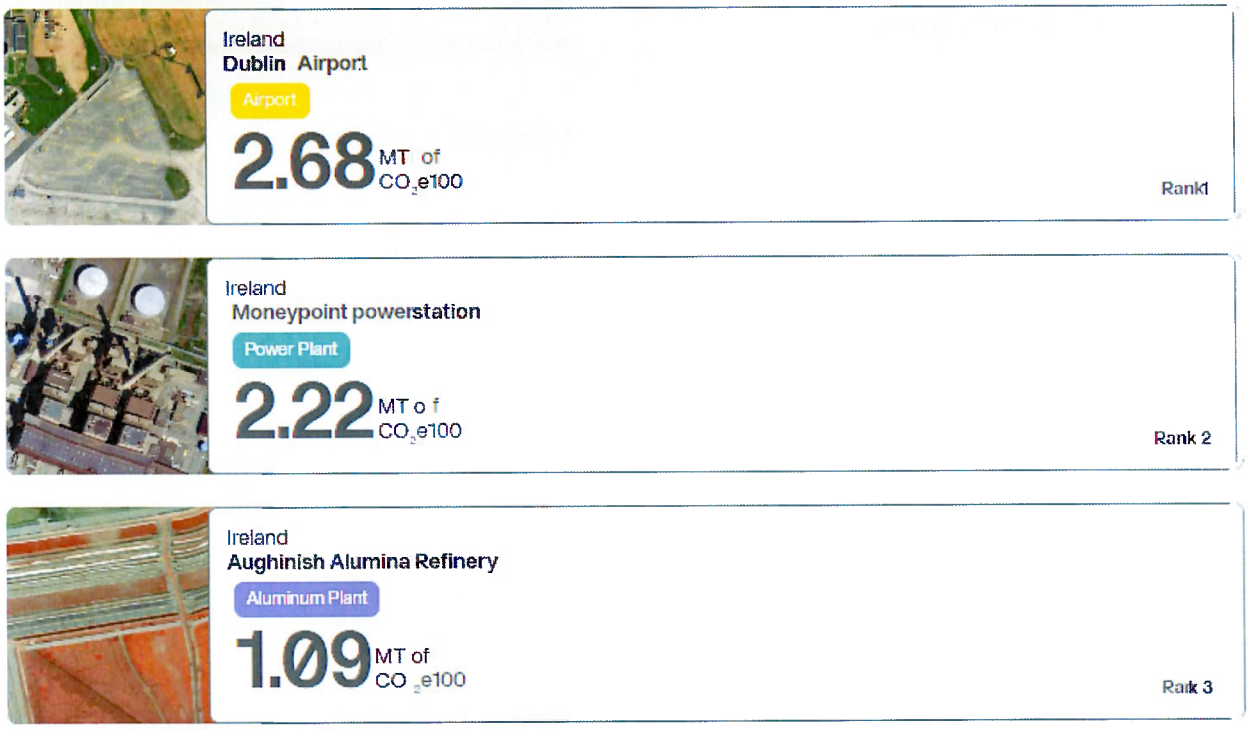
1.10 Climate Trace

At COP27, Climate Trace (https://climatetrace.org/), a non-profit organisation provided data on the largest Green House Gas (GHG) emitters among a wide selection of countries including Ireland. It showed that Dublin Airport was the largest GHG emitter in Ireland, emitting an estimated 1.02MT CO2e100.

At COP28, Dublin Airport is once again ranked as Ireland's #1 GHG emitter.

https://climatetrace.org/explore/co2e100-2022-ireland-irl

Disturbingly the emissions for 2022 are estimated at 2.68 MTof CO2e100.



This puts the Cli mate C hapter in the revised EIAR Supplement into perspective and provides unequivocal proof that the GHG e missions fromDublin Airport are '**Significant**'.

According to ClimateT race,org, Ireland had 76.42 MT of CO2e100 in 2022. Therefore, Dublin Airport accounted for 3.5% of all GHG emissions in the country i n 2022

According to Cli mateTrace,org, Ireland had 15.79 MT of CO2e100 due to the Transport sector in 2022. Therefore, Dubli n Airport accounted for 17% of all Transport GHG emissions in the country in 2022.

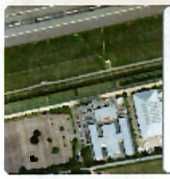
Total aviation GHG emissions were estimated at 2 97 MT CO2e100 in the whole of Ireland. Therefore, Dublin Airport accounted for 90% of the total aviation GHG emissions in Ireland.

Note these figures do not include non-CO2 warming effects.

In a comparison with UK airports, Dublin ranked 3rd, ahead of Manchester and Stansted with only Heathrow and Gatwick with higher emissions:

CLIMATE ASSESSMENT

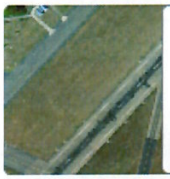
UK
London Heathrow Airport
Airport
15.91 MT of CO_2e100
Rank 1



UK
London Gatwick Airport
Airport
3.08 MT of CO_2e100
Rank 2

Ireland
Dublin Airport
Airport
2.68 MT of CO_2e100
Rank 3

UK
Manchester Airport
Airport
2.57 MT of CO_2e100
Rank 4



UK
London Stansted Airport
Airport
1.71 MT of CO_2e100
Rank 5

1.11 Non-CO2 Effects on Climate Change

In the Planner's report, it dismisses the impact of non-CO_2 effects on Climate Change.

In a scientific paper from January 2021 titled 'The contribution of global aviation to anthropogenic climate forcing for 2000 to 2018' (https://www.sciencedirect.com/science/article/pii/S1352231020305689?via%3Dihub), the authors state that 3.5% of total warming in 2011 was associated with aviation and that roughly two thirds of warming due to aviation at that time was caused by non-CO_2 sources. The aviation industry has been solely focused on CO_2 reduction, neglecting the necessity to reduce non-CO_2 aviation effects on Climate. In a Nature article published in July 2022 (https://www.nature.com/articles/s41558-022-01404-7), the authors state that:

> "*The aviation sector needs to neutralise CO_2 emissions and reduce non-CO_2 climatic effects. Despite being responsible for approximately two-thirds of aviation's impacts on the climate, most of aviation non-CO_2 species are currently excluded from climate mitigation efforts*".

Carbon offsetting will not be sufficient at reducing aviation's effects on Climate Change. The authors state:

> *"We demonstrate that simply neutralizing aviation's CO_2 emissions, if nothing is done to reduce non-CO_2 forcing, causes up to 0.4 °C additional warming, thus compromising the 1.5 °C target".*

The effects of non-CO_2 effects is also referenced by the EU Commission (https://ec.europa.eu/clima/eu-action/transport-emissions/reducing-emissions-aviation_en#tab-0-0):

> *"Aviation also has an impact on the climate through the release of nitrogen oxides, water vapour, and sulphate and soot particles at high altitudes, which could have a significant climate effect. A November 2020 study conducted by the European Aviation Safety Agency (EASA) looks into the non-CO_2 effects of aviation on climate change, and fulfils the requirement of the EU Emissions Trading System Directive (Art. 30.4).* ***Overall, the significance of combined non-CO_2 climate impacts from aviation activities, previously estimated to be at least as important as those of CO_2 alone, is now fully confirmed by the report".***

This contradicts section 11.3.15 of the EIAR which states that the "*the science is uncertain, and these additional impacts are not included in EU or international policy making at present*".

The EASA report confirms that the EIAR has grossly underestimated the effects of aviation on Climate Change by not considering the effects of non-CO_2 effects. The report provides three possible options to address non-CO_2 effects:

- EASA environmental certification standards
- Reductions in fuel burn
- Monetary charge levied on aircraft NOx emissions
- Inclusion of non-CO_2 effects under EU ETS
- ATM management

In the '*Report from the Commission to the European Parliament and the Council*' (https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0747&from=EN), it states:

> *"The significance of non-CO_2 climate impacts from aviation activities, previously estimated to be at least as important in total as those of CO_2 alone is fully confirmed by the report. This results in a need to consider how to best to address them further to contribute to the EU's climate objectives and the Paris Agreement, complementary to climate action already being taken. This would allow moving towards policies targeting aviation's full climate impacts. This would also result in co-benefits regarding local air quality".*

Non-CO2 effects are therefore a known issue and one that should have been included in the EIAR whilst analysing the significant effects of aircraft activities on Climate Change.

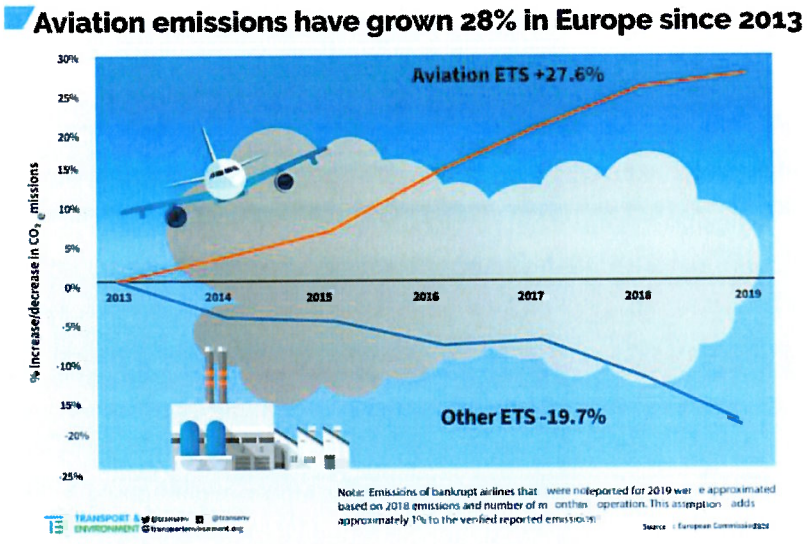
1.12 Transport & Environment

In an article (https://www.transportenvironment.org/state-aviation-ets/) produced by Transport & Environment (T&E), one of Europe's leading NGO's campaigning for cleaner transport states that figures for 2019 show that, unlike other sectors covered by the EU ETS, aviation emissions continued to grow by a nestimated 1 5% in 2019. This compares to a fal of 8.9% in the emissions from other sectors covered by the ETS, such as power, coal, steel and cement. The figure of 1.5% growth in 2019 only covers flights within Europe and excludes flights to and from Europe.

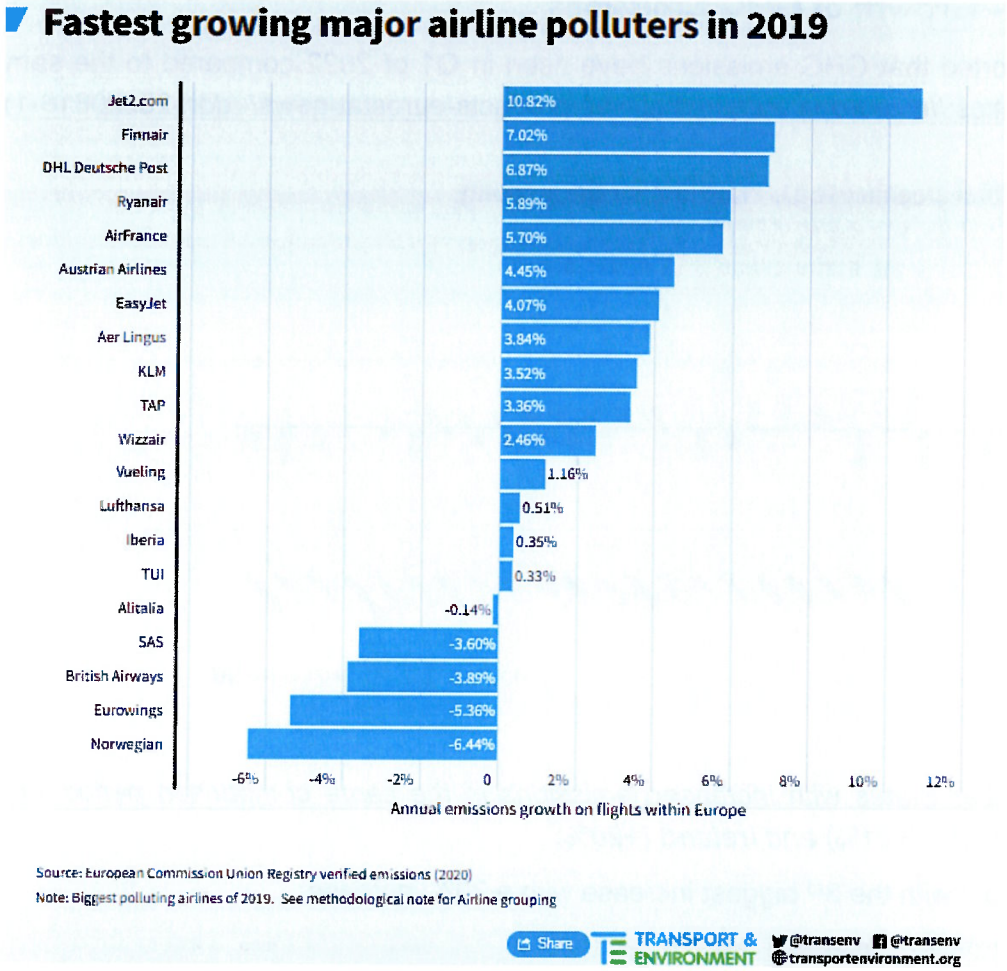
The article states that:

"*Reflecting the growth in emissions from this sector, airlines are an increasing presence among top emitters in different member states. In 2018, airlines were top 5 emitters in 13 member states (top 10 in 16 member states). In 2019 airlines were top 5 emitters in 14 member states, with Vueling reaching 5th spot in Spain. The aviation sector, including airports and airlines, is increasingly being recognised as a major emitter in states, after years of its emissions flying under the radar. This has led to increasing calls for these emissions to be included in national climate targets, a move supported by T&E.*"

The article states that since 2013, aviation emissions have increased 27.6% compared to a 19.7% decrease for other sectors in the ETS. Between 1990 and 2018, total EU aviation emissions grew from 1.5% of EU emissions to 3.6%.



Interestingly the article lists both Ryanair and Aer Lingus among the fastest growing airline polluters in 20 19:


Fastest growing major airline polluters in 2019
Jet2.com
Finnair
DHL Deutsche Post
Ryanair
AirFrance
Austrian Airlines
EasyJet
Aer Lingus
KLM
TAP
Wizzair
Vueling
Lufthansa
Iberia
TUI
Alitalia
SAS
British Airways
Eurowings
Norwegian
10.82%
7.02%
6.87%
5.89%
5.70%
4.45%
4.07%
3.84%
3.52%
3.36%
2.46%
1.16%
0.51%
0.35%
0.33%
-0.14%
-3.60%
-3.89%
-5.36%
-6.44%
-6%
-4%
-2%
0
2%
4%
6%
8%
10%
12%
Annual emissions growth on flights within Europe
Source: European Commission Union Registry verified emissions (2020)
Note: Biggest polluting airlines of 2019. See methodological note for Airline grouping
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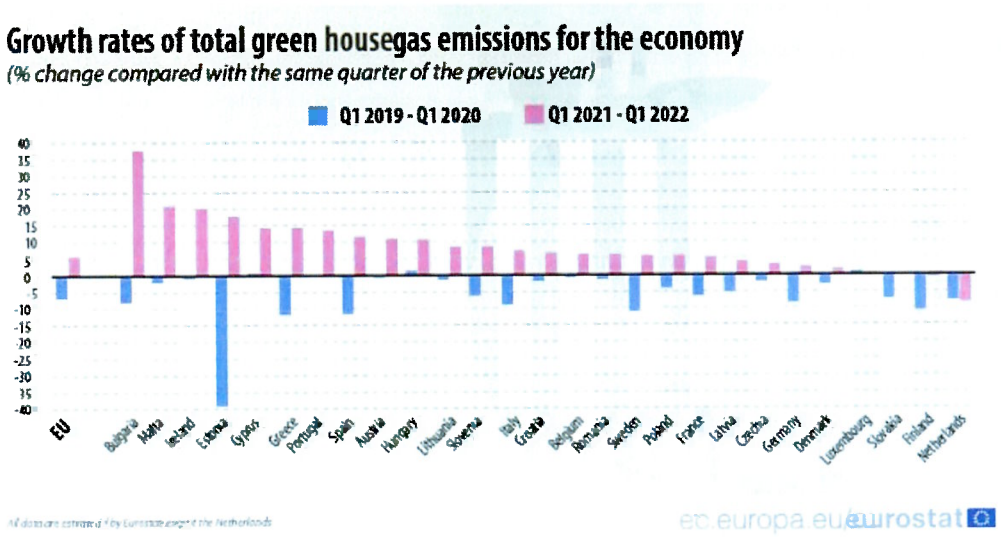
@transenv
transportenvironment.org

1.13 EuroStat – Growth of GHG Emissions

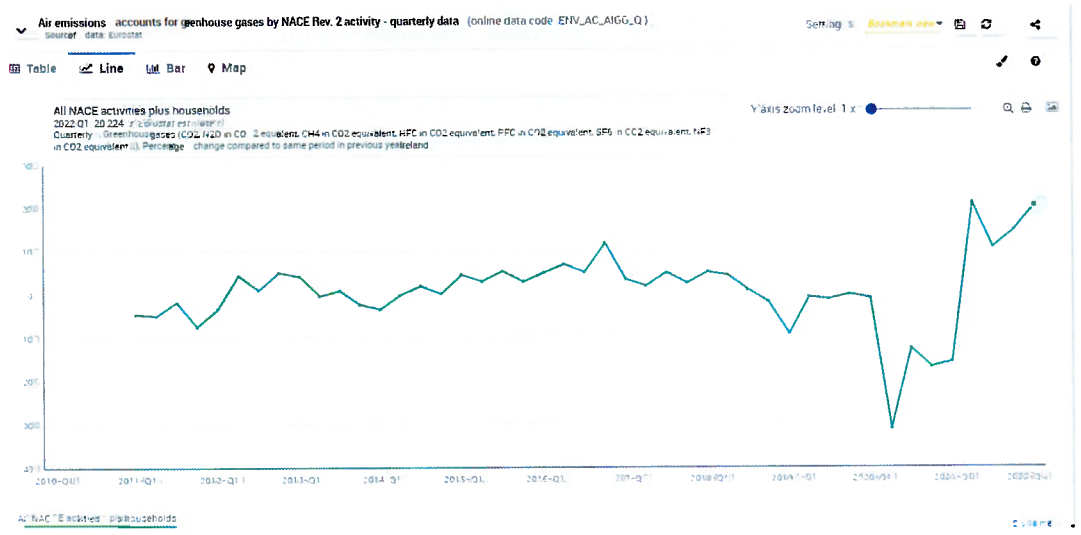
EuroStat has reported that GHG emissions have risen in Q1 of 2022 compared to the same quarter in 2021 (https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20220816-1):



It states:

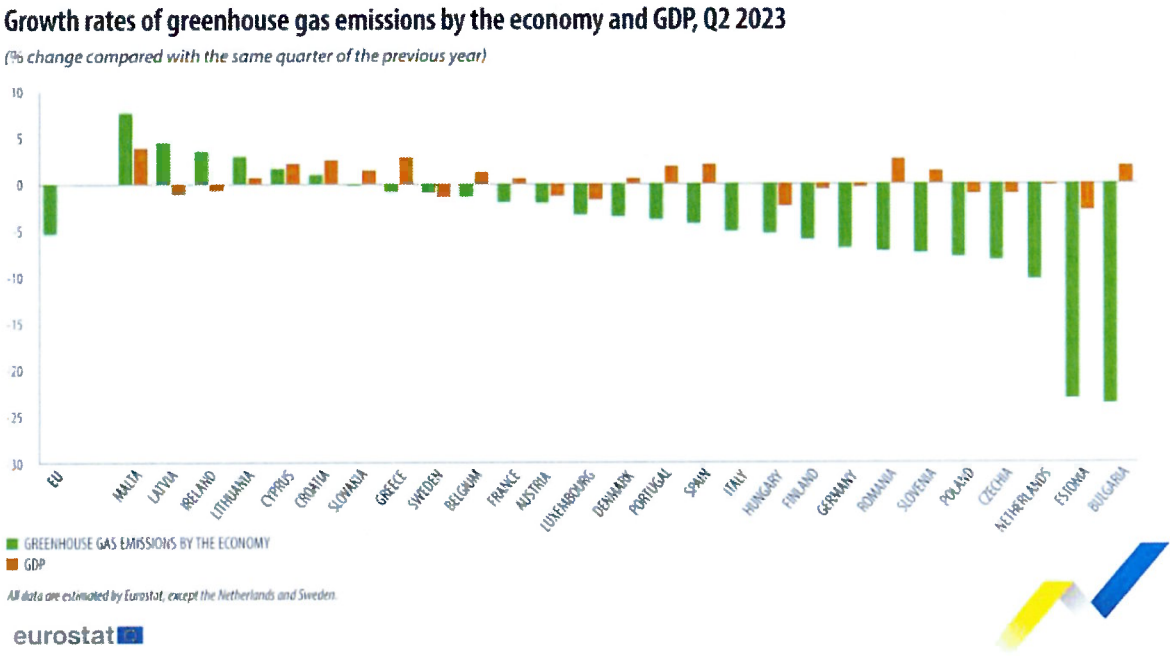
"*Among the Member States with increased emissions in the same comparison period were Bulgaria (+38%), Malta (+21%) and* ***Ireland (+20%)***".

Ireland is singled out with the 3rd biggest increase with a 20% increase:



In an updated report from Eurostat on November 15th 2023, https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20220816-1 EU economy GHG emissions fell by -5.3% in Q2 2023.

Ireland is named alongside Malta, Latvia, Lithuania, Cyprus and Croatia as the only EU countries that had an increase in emissions. Ireland registered a +3.6% increase.



In a related article in the Examiner, https://www.irishexaminer.com/business/economy/arid-41270623.html, it highlights how this rise in emissions shines light on Irish airlines. The article states:

> *"Speaking to the Irish Examiner, a spokesperson for Eurostat said that while national breakdowns are not published, "emissions from transport indeed contribute to the overall emissions, in particular in countries with large resident airlines," highlighting emissions from Ryanair, Europe's largest airline, as well as Aer Lingus - which are both registered in Ireland."*

1.14 Chatham House Report

A Chatham House Report titled 'Net Zero and the roleof the aviation indu stry'dated November 15th, https://www.chathamhouse.org/2023/11/net-zero-and-role-aviation-industry, focuses on the struggles of the aviation industry to reduce its ca rbon emissions in line with the Paris Agreement and net zero.

The report highlights the supply-side issues on lack of scale for viable alternatives stating they are still in the R&D phase. The report atte mpts to assess how managi ng demand for flights ca n help set the industry on the net zero trajectory. The model developed demonstrates that acting prudently, and reducing demand for flights in the short term, would offer the best chance of enabling the sector to play its role in achieving net zero.

1.15 OurWorldInData Per Capita CO2 Emissions

Ireland ranked 8th worst in the world on per capita CO2 emissions from International Aviation

Per capita CO_2 emissions from international aviation, 2018

Our World in Data

International aviation emissions are here allocated to the country of departure of each flight.

Table | Map | Chart | Show selection only

Per capita CO_2 emissions from international aviation kilograms

Country/area	↑ 2018
Iceland	3,505.6 kg
Qatar	2,472.7 kg
United Arab Emirates	2,195.1 kg
Singapore	1,741.0 kg
Malta	991.6 kg
New Zealand	640.3 kg
Mauritius	599.8 kg
Ireland	574.1 kg
Switzerland	513.3 kg

1.16 Conclusion

The chapter on Climate and Carbon in the EIAR is seriously flawed when assessing the significance of GHG emissions. The latest IEMA guidelines clearly demonstrate that the additional GHG emissions from the aircraft movements from the Relevant Action will lead to a significance of '***major adverse***' as these emissions do not follow the net zero trajectory.

The omission of realistic future years scenarios demonstrates a serious flaw in the Climate and Carbon chapter. It is Government Policy to increase passenger numbers and the daa itself has publicly stated that they will submit a 40mppa planning application before the end of 2023 and have launched a portal to showcase it, https://dublinairport.exhbition.app/. Failure to include future years without the 32m passenger cap is contrary to EIAR legislation and guidelines.

The Inspector has failed to properly quantify GHG future emissions and failed to assign the significance as '**major adverse**' as per IEMA guidelines.

The Inspector has also minimised the effects of non-CO_2 effects on Climate Change and achieving the net zero target.

2.0 PROJECT IRELAND 2040

2.0 NPF

The Relevant Action facilitates growth at Dublin Airport, especially at night, and this contravenes the objectives of Project Ireland 2040 with regard to Balanced Regional Development. This imbalance in development has also been raised in a recent publication from Oxford Economics for the Shannon Airport Group.

The National Planning Framework (NPF) is a high-level strategic plan to guide future development and investment. It also sets targets around social outcomes. The NPF recognises the importance of noise management which is implemented through the following Objectives 52 and 65:

National Policy Objective 52

"*The planning system will be responsive to our national environmental challenges and* ***ensure that development occurs within environmental limits****, having regard to the requirements of all relevant environmental legislation and the sustainable management of our natural capital.*"

National Policy Objective 65

"*Promote the pro-active management of noise where it is likely to have significant adverse impacts on health and quality of life and support the aims of the Environmental Noise Regulations through national planning guidance and Noise Action Plans.*"

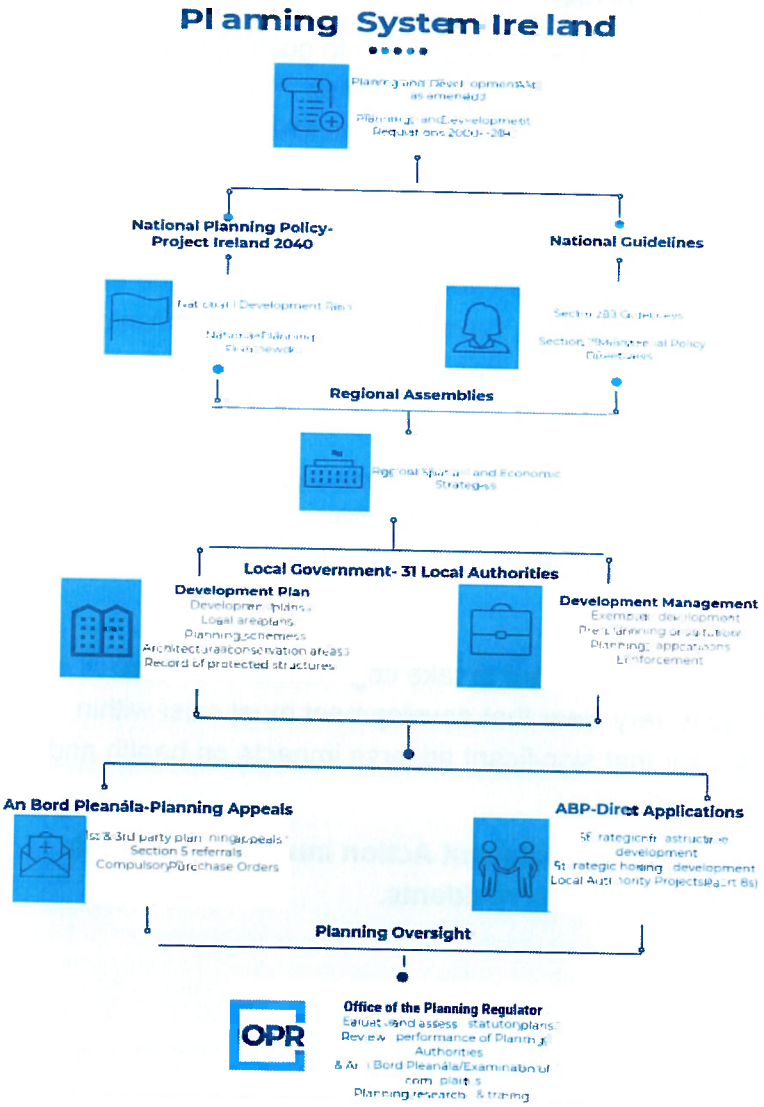
These two objectives are critically important for the Board to take cognisance of and to understand their importance. Objective 52 is very clear that development must exist within environmental limits and Objective 65 is clear that significant adverse impacts on health and quality of life needs to be proactively managed.

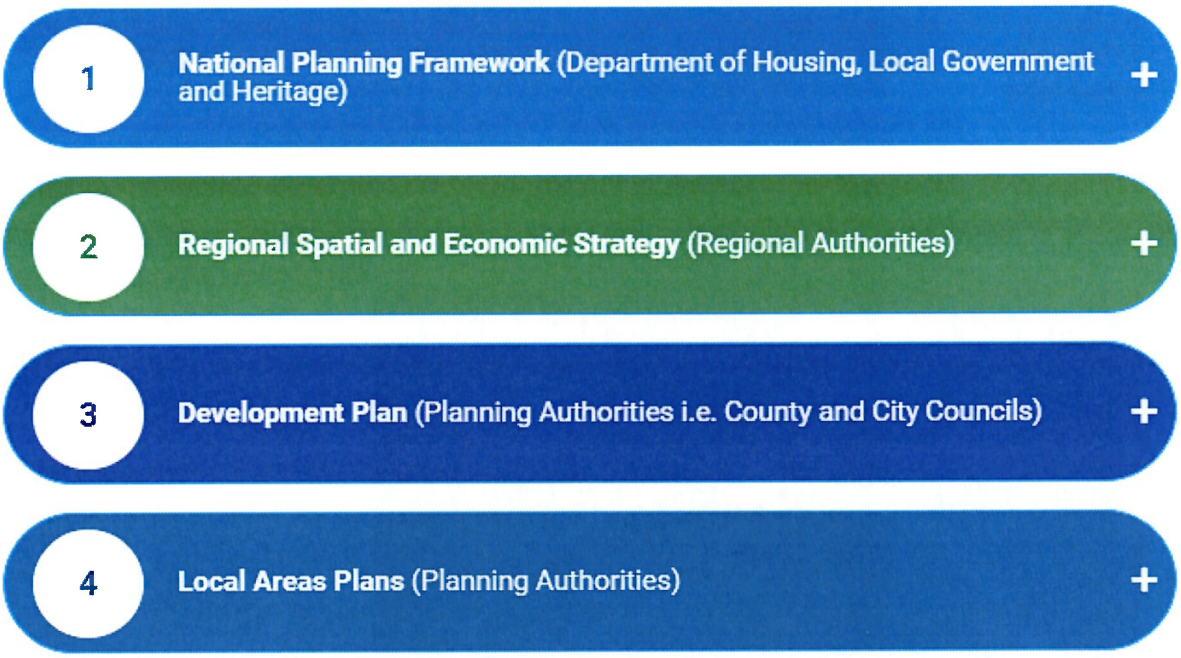
Based on these two over-arching objectives, the Relevant Action must be refused in order to protect the environment and health of local residents.

2.1 Project Ireland 2040

The Department of Housing Planning and Local Government, on behalf of the Irish Government, prepared and published the finalised National Planning Framework under Project Ireland 2040, the overarching policy and planning framework for the social, economic and cultural development of Ireland.

Project Ireland 2040 sits above the Regional Assemblies and Local Government:





From the NPF's website, https://www.npf.ie/project-ireland-2040-national-planning-framework/, the objectives of the National Development Planning Framework are:

- Guide the future development of Ireland, taking into account a projected 1 million increase in our population, the need to create 660,000 additional jobs to achieve full employment and a need for 550,000 more homes by 2040;
- Of the 1 million extra people,
- 25% is planned for Dublin, recognised as our key international and global city of scale and principal economic driver,
- **25% across the other four cities combined (Cork, Limerick, Galway and Waterford), enabling all four to grow their population and jobs by 50-60%, and become cities of greater scale, i.e. growing by twice as much as they did over the previous 25 years to 2016, and**
- **with the remaining 50% of growth to occur in key regional centres, towns, villages and rural areas, to be determined in the forthcoming regional plans – Regional Spatial and Economic Strategies (RSESs).**
- Enable people to live closer to where they work, moving away from the current unsustainable trends of increased commuting;
- Regenerate rural Ireland by promoting environmentally sustainable growth patterns;
- **Plan for and implement a better distribution of regional growth, in terms of jobs and prosperity**;
- Transform settlements of all sizes through imaginative urban regeneration and bring life / jobs back into cities, towns and villages;

- Co-ordinate delivery of infrastructure and services in tandem with growth, through joined-up NPF/National Investment Plan and consistent sectoral plans, which will help to manage this growth and tackle congestion and quality of life issues in Dublin and elsewhere

A key strategy is targeting a level of growth in the Northern, Western and Southern regions combined to at least match that projected in the Eastern and Midland region:

Section 1.2 of the plan sets out a new strategy for managing growth:

> *"From an administrative and planning point of view, Ireland is divided in to three regions: the Northern and Western, Southern, and Eastern and Midland Regional Assembly areas.* ***We need to manage more balanced growth between these three regions*** *because at the moment Dublin, and to a lesser extent the wider Eastern and Midland area, has witnessed an overconcentration of population, homes and jobs.* ***We cannot let this continue unchecked and so our aim is to see a roughly 50:50 distribution of growth*** *between the Eastern and Midland region, and the Southern and Northern and Western regions, with 75% of the growth to be outside of Dublin and its suburbs."*

And supporting ambitious growth targets to enable the four cities of Cork, Limerick, Galway and Waterford to each grow by at least 50% to 2040 and to enhance their significant potential to become cities of scale.

National Policy Objectives 1a-1c clearly outline how growth should be dispersed throughout the country:

National Policy Objective 1a

The projected level of population and employment growth in the Eastern and Midland Regional Assembly area will be at least matched by that of the Northern and Western and Southern Regional Assembly areas combined.

National Policy Objective 1b

- Eastern and Midland Region: 490,000 - 540,000 additional people i.e. a population of around 2.85 million;
- Northern and Western Region: 160,000 - 180,000 additional people i.e. a population of just over 1 million;
- Southern Region: 340,000 - 380,000 additional people i.e. a population of almost 2 million.

National Policy Objective 1c

- Eastern and Midland Region: around 320,000 additional people in employment i.e. 1.34 million in total;
- Northern and Western Region: around 115,000 additional people in employment i.e. 450,000 (0.45m) in total;
- Southern Region: around 225,000 additional people in employment i.e. 880,000 (0.875m) in total.

Table 2.1 summarises the NPF and where growth should occur:

Table 2.1 The NPF at a Glance: Targeted Pattern of Growth, 2040

National Policy Objective	Eastern and Midland	Southern	Northern and Western
1. Growing Our Regions	+ 490,000 - 540,000 people (2.85m total) +320,000 in employment (1.34m total)	+ 340,000 - 380,000 people (2m total) +225,000 in employment (880,000 total)	+160,000 - 180,000 people (1m total) +115,000 in employment (450,000 total)
2. Building Stronger Regions: Accessible Centres of Scale[20]	Dublin City and Suburbs: +235,000 - 290,000 people (at least 1.41 million total) Regional Spatial and Economic Strategy to set out a strategic development framework for the Region, leading with the key role of Athlone in the Midlands and the Drogheda-Dundalk-Newry cross-border network	Cork City and Suburbs: +105,000 - 125,000 people (at least 315,000 total) Limerick City and Suburbs: +50,000 - 55,000 people (at least 145,000 total) Waterford City and Suburbs: +30,000 - 35,000 people (at least 85,000 total) Regional Spatial and Economic Strategy to set out a strategic development framework for the Region	Galway City and Suburbs: +40,000 - 45,000 people (at least 120,000 total) RSES to set out a strategic development framework for the Region, leading with the key role of Sligo in the North-West, Athlone in the Midlands and the Letterkenny-Derry cross-border network
3. Compact, Smart, Sustainable Growth	50% of new city housing within existing Dublin City and suburbs footprint 30% all new housing elsewhere, within existing urban footprints	50% new city housing on within existing Cork, Limerick and Waterford Cities and Suburbs footprints 30% all new housing elsewhere, within existing urban footprints	50% of new city housing within existing Galway City and suburbs footprint 30% all new housing elsewhere, within existing urban footprints

2.2 Report from Shannon Airport Group

On the 10th of November 2023 the Shannon Airport Group published a report from Oxford Economics on the The Economic Impact of the Shannon Airport Group:

https://www.snnairportgroup.ie/news-media/latest-news/2023/oxford-economics-impact-report-snngroup

It is very important to put this report into context. Oxford Economics were employed by the Department of Transport, Tourism and Sport to conduct a '*Review of Future Capacity Needs at Ireland's State Airports*'. The final report was published in August 2018:

https://assets.gov.ie/22659/d2cbb36779534741adde4be4f0943a7d.pdf

Therefore, they are a very reputable body with experience of the Irish Aviation industry and having a record working for the Department of Transport, Tourism and Sport. In that context they are perfectly positioned to conduct a non-biased report into areas of the Irish Aviation industry.

The press release from the Shannon Airport Group is very relevant to Ireland's National Aviation Policy and how it adheres to Project Ireland 2040:

> *"Shannon Airport Group makes a major economic contribution to the Mid-West region and Ireland, and has the potential to do even more in the future. However, one of the areas we note in our report is that* ***Ireland's aviation policy has to date failed to create a level playing field for Ireland's regional airports to flourish.*** *Given that airports can drive regional growth, and that* ***Project Ireland 2040 aims to rebalance growth across Ireland****, there is a strong argument for providing state aid to Shannon Airport.*
> *"There is strong evidence that airports can have a positive impact on local and regional economies and Governments are recognising the benefits of having a balanced aviation sector.* ***If a country has an excessive reliance on a single airport, it can concentrate economic growth and any disruptions could cause a significant impact on the tourism sector, as well as the economy as a whole."***

The press release goes on further to make a series of recommendations, one of which is:

- ***Government should update the Irish Aviation Policy published in 2015 to help it achieve the long-term growth targets set out in Project Ireland 2040.***

The press release also quotes the Minister of State at the Department of Transport, Jack Chambers TD:

> ***"Shannon has a key role to play in rebalancing Ireland's aviation landscape, alleviating the congestion at Dublin Airport and delivering balanced regional development for our country."***

In the Executive Summary, Oxford Economics discusses the policy environment and challenges for Shannon Airport:

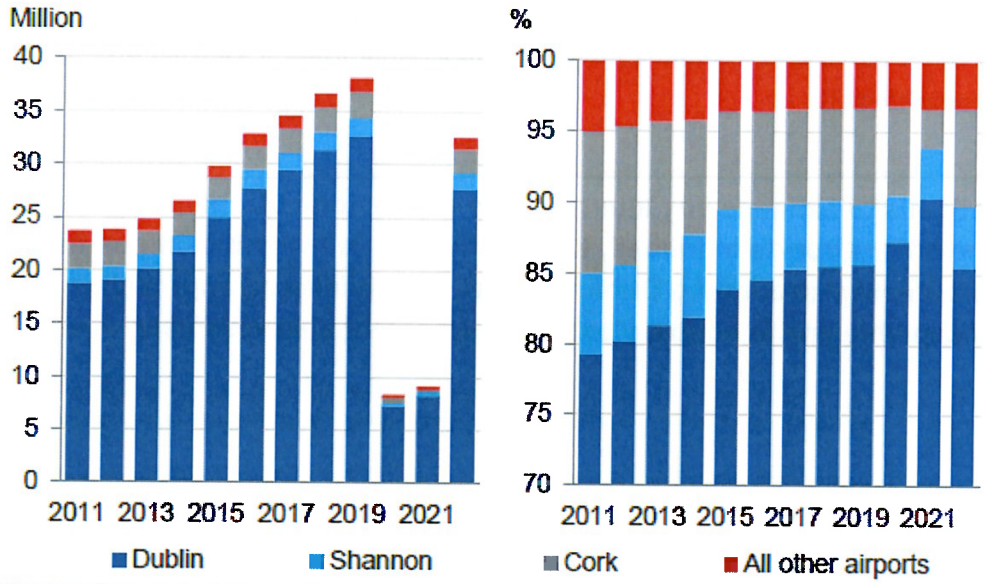
> *"**While the outlook for growth in the aviation sector is positive, Ireland's aviation sector is one of the most concentrated in Europe.** Dublin Airport forms a higher share of aviation activity than across comparator European nations and has captured almost all of the recent growth in passengers across Ireland. It may be that this is partly due to the aviation and economic policy decisions made by the Irish Government, such as excluding regional airports serving more than one million passengers from financial support provided under the Regional Airports Programme and decisions by the Commission for Aviation Regulation to fund continuous capacity expansion at Dublin Airport without consideration of the impact this has on national infrastructure and regional balance."*
>
> *"**Rebalancing passengers to regional airports, such as Shannon, will bring a range of benefits to the Irish economy.** A strong regional airport assists in building a more vibrant business environment, helping to unlock growth. If a country has an excessive reliance on a single airport, any disruptions, such as labour shortages, natural disasters, or technical failures, could cause a significant impact on the tourism sector, as well as the economy as a whole."*
>
> *"**Supporting regional airports will also enable the Government's wider regional growth objectives, as set out in Project Ireland 2040.** However, our baseline forecast indicates that the desired spatial rebalancing of economic growth is unlikely to materialise without substantial intervention, with population and employment expected to continue to be concentrated across the Eastern & Midland region (including Dublin)."*
>
> *"**The National Aviation Policy predates the Project Ireland 2040 development strategy, and a review of aviation policy is needed to accommodate the Government's ambitions for rebalancing regional growth across Ireland. There would also be a series of environmental benefits that would support the Government's efforts to tackle climate change, such as reducing noise in***

residential areas or pollution from large-scale expansion projects in Dublin Airport."

The above statement from Oxford Economics clearly states that a review of aviation policy is needed as it's failing the core aims of Project Ireland 2040 to support balanced regional development and growth across Ireland. It also the environmental benefits of reducing noise and pollution.

Section 3.4 of the Oxford Economics report is focused on passenger numbers. Since 2011 Ireland saw an 8.9m increase in passenger travelling through its airports, which is a 60% increase. But the report outlines that Dublin Airport accounted for 85% of passengers in 2022 up from 79% in 2011. Dublin Airport accounted for all of the net increase between 2011 – 2022. Shannon's market share declined from 5.8% in 2011, to 4.4% in 2022.

Fig. 19. Passengers by airport, Ireland, 2011 to 2022



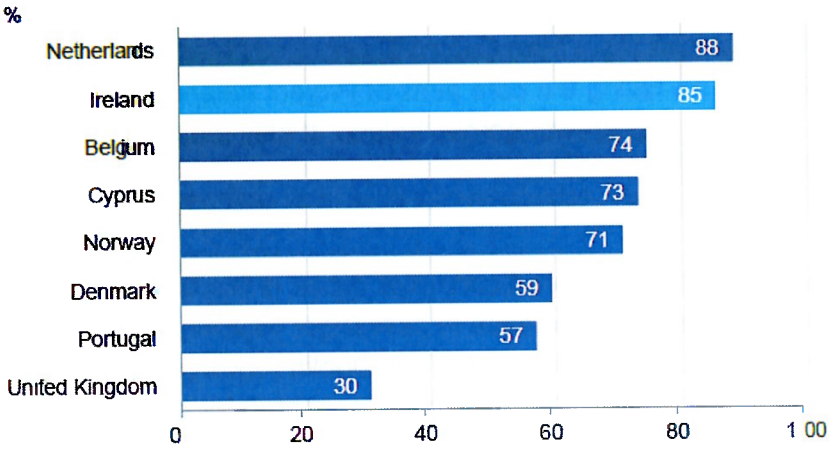
Source: CSO, Oxford Economics

In section 4.2 of the report, it highlights how Ireland's aviation sector is one of the most concentrated in Europe. Only the Netherlands has a larger share of passenger concentrated at a single airport.

85%

Ireland's aviation sector is one of the most concentrated in Europe: only the Netherlands has a higher share of passenger traffic concentrated at one airport.

Fig 22. Market share of the largest airport, selected countries, 2019



Source: CSO, International Airports Review, Statistia, Oxford Economics

The report discusses the Dutch Government's plans to cap the number of flights at Schiphol to address emissions and noise issues. This demonstrates the willingness to tackle market dominance and one that Ireland could adopt by adhering to Project Ireland 2040 to promote balanced regional development.

The EIAR submitted fails to examine any alternative to expansion at Dublin Airport with respect to using the other airports in Ireland, which would have a significant positive impact on the environment surrounding Dublin Airport. This blinkered approach is not environmentally acceptable and is contrary to the Environmental Assessment Legislation.

3.0 FLEET RENEWAL

3.0 Fleet Renewal

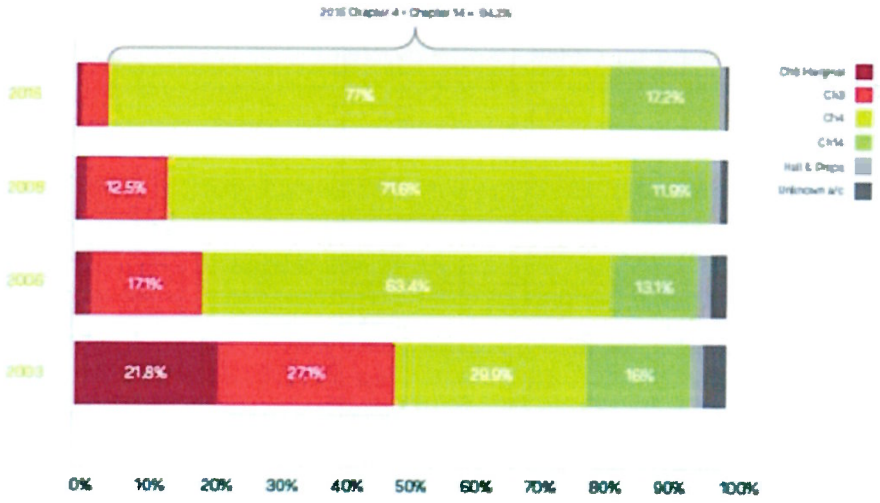
The daa are solely relying on fleet renewal to deliver a reduction in noise over time. There is no reduction in the number of flights on the South Runway at night and forecasts show that they will grow as the Night Quota System facilitates growth in ATMs. There is also future growth during the daytime with the new North Runway.

The Dublin Airport Noise Action Plan (https://www.fingal.ie/sites/default/files/2019-04/NAP%20Final.pdf) references the change in aircraft types from 2003 to 2017.

- In 2003, 46% of aircraft were Chapter 4 and 14,
- In 2008, 83% of aircraft were Chapter 4 and 14
- In 2017, 90% of aircraft were Chapter 4 and 14

> In 2017 over 90% of aircraft using Dublin Airport were the quietest types (Chapter 4 and 14) compared to 83% in 2008 and 46% in 2003[5].

A similar depiction of fleet modernisation at Dublin Airport since 2003 is given in the daa's 2019 Compliance Report for ANCA, https://www.fingal.ie/sites/default/files/2021-02/dublin-airport-noise-supplementary-compliance-report-final180121-chapter-assessment.pdf.



Yet noise exposure levels grew exponentially in line with movement increases.

So, if fleet replacement didn't work in the past, why do ANCA/ABP solely rely on fleet replacement to Chapter 14 levels to reduce noise if movement levels are to increase? This is clear evidence that fleet replacement does not counter the effects of ever-growing movements which is facilitated by ANCA's Night Quota System .ANCA must interrogate the histo rical data and explain why with the adoptio nof quieter aircraft, noise levels grew exponentially due to the increase noise contour footprint.

- In 2016, the 45dB Lden contour was 37 0km^2
- In 2019, the 45dB Lden contour grew to 745km^2

This is a <u>doubling</u> of the size of the 45dB Lden contour in just 3 years.

- In 2016, the 40dB Lnight contour was 212km^2
- In 2019, the 40dB Lnight contour grew to 328km^2

This is a <u>50% increase</u> in the size of the 40dB Lnight contour in just 3 years.

Here's a comparison of the Lden contours areas from 2006 to 2019:

dB Lden	2006	2016	2018 Baseline	2019 Baseline
>=45		370	703.2	745.7
>=50		148	209.3	218.7
>=55	57.6	67	85.9	88.3
>=60	22.1	27.3	33.5	35.6
>=65	9.1	10.4	11.6	12.2
>=70	3.7	3.9	4.1	4.4
>=75	1.6	1.6	1.7	1.7

Here's a comparison of the Lnight contours areas from 2006 to 2019:

dB Lnight	2006	2016	2018 Baseline	2019 Baseline
>=40		212	304.4	328.4
>=45		90	118.2	122.2
>=50	28.3	38.8	48.4	52.3
>=55	11.3	14.7	16.8	18.6
>=60	4.7	5.6	5.8	6.4
>=65	1.9	2.3	2.3	2.5
>=70	0.9	1	1	1

There has been no explanation given due to this growth in contour areas even though the percentage of quieter aircraft grew to over 90% in that timeframe. And why this will not be the case in future years. The modelling by the daa for the quieter aircraft cannot the trusted. The recorded noise levels from the Chapter 14 aircraft are in line with those of Chapter 4 on the ground at the noise monitors surrounding Dublin Airport.

ANCA provided a report titled a '*Review of Applicant's Fleet and Forecast Assumptions and Curfew Commentary*' in Appendix G of their draft decision. The projections of future aircraft mix were analysed by 'Altitude Aviation Advisory'. Altitude Aviation Advisory did not develop passenger forecasts for Dublin Airport but simply used Mott MacDonalds forecasts. No independent analysis of Mott MacDonalds forecasts has taken place. ANCA, as independent Noise Regulator, and the Board are therefore taking the daa's passenger forecasts without any due diligence.

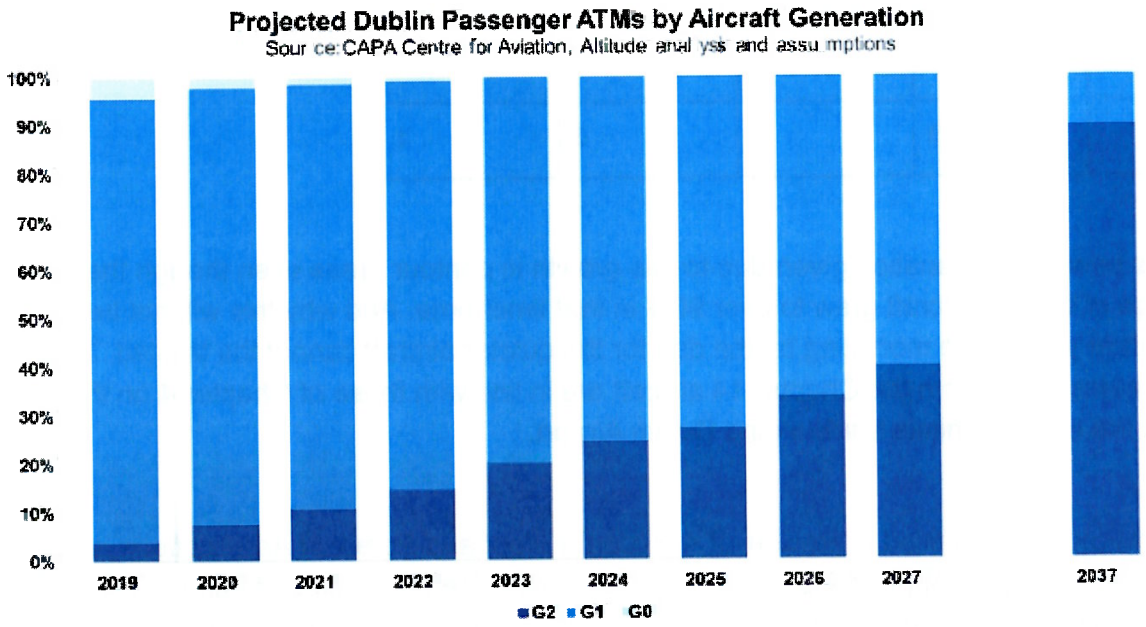
Forecast Parameters

- We have not developed passenger forecasts for Dublin Airport.
  - Instead, **we have used the Mott MacDonald central unconstrained ATM forecast**.
  - Additionally, **we have adopted the Mott Macdonald 2019 ATM shares by airline**, reported for Aer Lingus, Ryanair and British Airways.

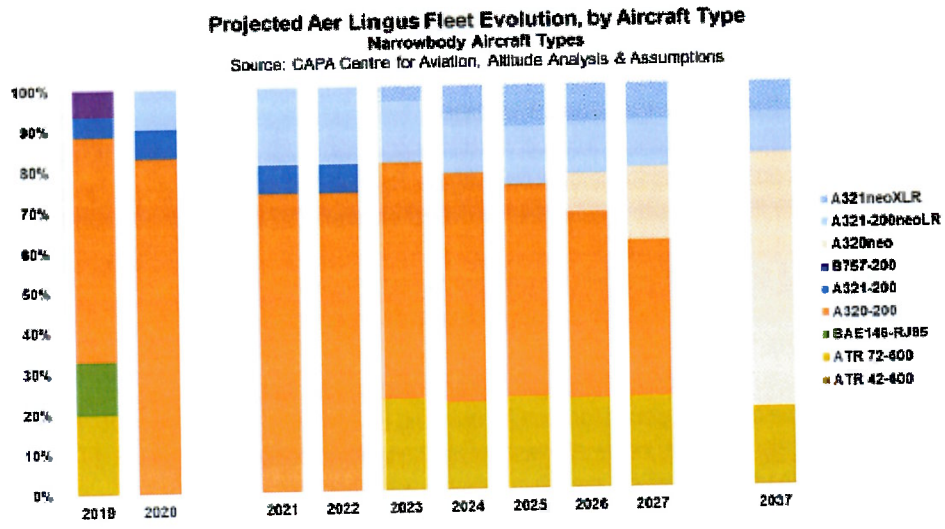
Also worryingly from Altitude Aviation Advisory:

- We have not had access to detailed data on actual flight operations at Dublin (only planned schedules) and have not been able to consult directly with the DAA or airlines on their plans

The report provides a forecast of the various aircraft generation types. Circa 25% of aircraft in 2025 will be Generation 2, the year used for the Regulatory Decision. The projections are for 90% replacement by 2037 which is less than the whole fleet replacement modelled by the Phenomena project. Therefore, the estimated reduction in health burden of 22-23% will be reduced at Dublin Airport.



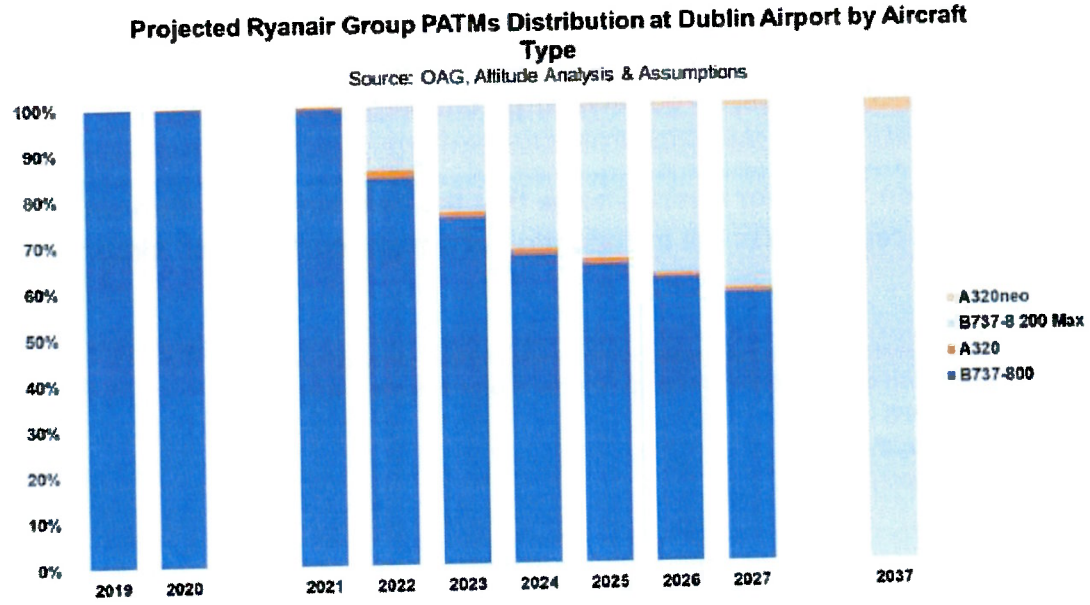
The report provides modelling of the projected fleet development for Aer Lingus. The majority of the fleet are narrow body aircraft. The projections show that the A320neo is not coming on stream until 2026, after the time period considered in the daa's application.



These forecasts are predicated on the following assumptions:

A320 / A320neo	▪ 2021: Average age of existing A320 is ca. 14yrs with min age of ca. 10yrs and max age of ca. 20yrs. ▪ 2021-27: We assume A320 aircraft are used to cover capacity on some of the routes previously operated by Stobart/CityJet. ▪ 2021-27: We assume a gradual phase out of the existing A320 aircraft beginning 2023. ▪ 2021-31: We assume an order will be made for A320neo aircraft (or allocated to Aer Lingus from existing group capacity), and that these will begin to replace the A320 (with gradual growth of the combined A320/A320neo fleet). ▪ 2028-37: We assume continued gradual growth of the A320neo fleet.

The modelling of Ryanair's fleet is as follows:



The projections show thatthe B737-8 200 Max has approximately a 35% share by 2025, the time period considered in the daa's application.

These forecasts are predicated on the following assumptions:

B737-8 200 MAX	▪ 2021: Thisaircraft is now certifiedfor service once again. Ryanairhas 173 outstanding orders for thetype, witha schedule for deliveries over 2022-24 (source: CAPA). ▪ 2021-27: We assumethe aircraft are deliveredas per the schedule over this period Further, we assume that Ryanair is able tosecure deliveryslots for further aircraft over 2025-27. ▪ 2028-37: We assume further aircraft of this type will be ordered, and that deliveries will continue over this period (gradually replacing B737-800 airframes). We assume deliveriescome at a faster rate thanretirements of other aircraft types ,leading to netfleet growth consistent with shorterm projections by the company butat a lower rate than seen historically.

ANCA's reduction in noise levels outcomes presented in its NAO are not achievable based on the results from the Europe wide Phenomena project.

In the conclusion of the Phenomena report, it highlights that the study included the review of 300 Noise Action Plans (NAPs). The review indicated that a "*wide variety of measures are focused on noise mitigation both from the receiver as well as the noise source perspective. These often combine operating restrictions, such as a curfews with a penalty regime, noise monitoring and infrastructure development including lengthening the runway to avoid low flights over residential areas*".

It is worth noting that the NAP for Dublin Airport never attempted to provide any meaningful reduction in noise levels, as curfews or penalty regimes were never considered.

The Phenomena study concludes for Aircraft noise that the best single solution with respect to health burden reduction is the introduction of a night curfew at all airports.

Aircraft

The best single solution with respect to health burdenreduction is the introduction ofa night curfew at all airports, i.e. an EU-wide ban on night flights. Although this has a large reduction in health burden, it has also a very high cost.

Health burden reduction in 2030: 37-60%

Benefit to cost ratio over 2020-2035: 0.1-0.2