

A Green New Deal for Leeds City Region

GALBA's Vision for a Sustainable Local Economy
(Group for Action on Leeds Bradford Airport)



What is GALBA?

The Group for Action on Leeds Bradford Airport (GALBA) is a group of concerned citizens in West Yorkshire. We come from a range of backgrounds and from across the political spectrum to stop the proposed expansion of Leeds Bradford Airport (LBA). After Leeds City Council approved LBA's planning application in March 2021, we asked the Secretary of State to 'call in' the application and have it considered at a public inquiry. We await a decision on our request.

W: www.galba.uk

FB: www.facebook.com/GfAoLBA

T: [@galba_action](https://twitter.com/galba_action)

Published by GALBA.

Acknowledgements

This report was co-written by Alison Pilling, Mike McGrath, Nick Hodgkinson and Nicky Ford of GALBA, Jonathan Essex and Robert Magowan from Green House think tank and Tahir Latif from CACCTU (Campaign against Climate Change Trade Union group).

Many thanks to Emilia Ford for the report design. Thanks also to Matthew Thomas for the cover photo.

Sustainable mobility for Europe

Europe faces a considerable challenge for transport and mobility: how to reduce emissions while connecting citizens, creating green jobs and leading innovation. The European Mobility Atlas 2021, published by Heinrich-Böll-Stiftung, assessed this landscape, including the unequal nature of aviation and the need for a just transition. Localities across the continent face this task under unique circumstances. This report considers the choices available to Leeds City Region, and presents a greener, jobs-rich future for the area.

W: www.eu.boell.org/European-Mobility-Atlas

Green European Foundation

This report is published by the Green European Foundation with the support of Green House Think Tank. The Green European Foundation (GEF) is a European-level political foundation whose mission is to contribute to a lively European sphere of debate and to foster greater involvement by citizens in European politics. GEF strives to mainstream discussions on European policies and politics both within and beyond the Green political family. The foundation acts as a laboratory for new ideas, offers cross-border political education and a platform for cooperation and exchange at the European level.

Rue du Fossé – 1536 Luxembourg

*Brussels Office: Mundo Madou – Avenue des Arts 7-8,
1210 Brussels*

T: +32 2 329 00 50

E: info@gef.eu

W: www.gef.eu

GEF Project Coordination: Luka Gudek

This publication has been realised with the financial support of the European Parliament. The European Parliament is not responsible for the content of this project.



Our Greener Vision

In a time of climate crisis, GALBA believes that the expansion of aviation runs counter to the needs of society both locally and globally. We reject the false narrative of jobs versus the environment as two opposing forces; preventing climate catastrophe has the potential to be the richest source of employment in the coming years, along with restoring services in care, health, education and transport.

Workers in the aviation industry have been hit hard by the COVID-19 pandemic and their skills and experience need to be recognised and used. We believe that local jobs and our fragile climate are best safeguarded by investing in a new green economy that supports sustainability whilst making sure our communities are employed in secure, productive and meaningful work.

This report sets out our concerns about the claims being made by Leeds Bradford Airport around job creation. Our view is that climate change will cause airport expansions - such as that put forward by LBA - to become stranded assets, and we call on leaders in Leeds City Region to recognise where investment would be more usefully put in the long term.

We propose a more forward-looking, ambitious and achievable economy that reduces reliance on aviation and encourages investment in our local communities, whilst addressing the other key challenges we face around transport, energy and food supply. Our generation has seen the emergence of a human-created climate emergency. We must also be the generation to fix this, by making best use of our most precious resource – our people.

Endorsements

Leeds TUC

Leeds Trades Union Council, representing Trade Union branches in Leeds, is proud to endorse this report setting out the need for a Green New Deal and how it would provide sustainable, secure long term jobs for the Leeds City region. - www.leedstuc.wordpress.com

Campaign Against Climate Change Trade Union group

CACCTU fully supports the campaign against expansion of Leeds Bradford and the proposals in this report for a more sustainable economy that supports the needs of the communities in the Leeds region. The employment plan described in these pages is consistent with CACCTU's demands for workers' long term job security, an economy that works for the majority, and a decarbonisation of activities across society. - www.cacctu.org.uk

Safe Landing

It is clear to us, as aviation workers, that technology alone won't deliver a 1.5°C-consistent emissions reduction pathway. Future policies and regulations will mean we fly less frequently, less far and less fast. Leeds City Region should heed GALBA's warning about the risk of stranded-assets if the wrong infrastructure is built. This is not only in the best interests of the planet, but also of the workers who rely on decisions being made for a future of long-term, sustainable employment. - www.safe-landing.org/

Executive Summary

The findings in this report point towards three main conclusions:

1. The job claims of LBA are wholly misleading and far higher than those likely to materialise in reality.

- Contrary to widespread reports that the expansion will support 12,650 jobs, LBA itself projects only 1,460 new jobs will be directly created by 2030.
- Analysis by the New Economics Foundation (NEF) finds even these figures are based on overly optimistic projections, a misleading linear relationship between passenger numbers and jobs and completely ignoring the impact of automation.
- Passenger numbers were static for three years prior to COVID at four million a year; yet LBA assumes a rapid return to normal and that optimistic growth will start anew.
- The track record of aviation employers also undermines such forecasts. Bristol Airport and Birmingham Airport predicted similar job growth to LBA – increases of two thirds ten years after their major expansions – but delivered only 23% and 7% growth respectively.
- To the extent that the expansion could create jobs, the record of aviation employers suggests that these will be dominated by insecure, low paid and/or temporary jobs, as well as being far fewer than claimed
- Many of the wider impact jobs claimed will emerge anyway if other options are pursued as they are not conditional on airport expansion.

2. Current ongoing tax breaks from central government to LBA flights amount to £100m annually.

- The effective subsidy will rise by a further 75% by 2030 if it increases in line with LBA's ambitions for passenger growth.
- The tax break – largely based on the tax-exempt status of kerosene fuel – overwhelmingly benefits the small minority of flyers who take the vast majority of flights in the UK.

3. In contrast, we propose a Green New Deal rooted in the real needs of local communities for jobs that are genuinely socially useful and environmentally beneficial as well as being more secure. We estimate direct job creation potential of over 30,000 for the Leeds City Region over the course of a ten-year transition (see Table 1). Including care work as a critical part of a healthier, low-carbon future adds a further 11,000.

Job creation under a Green New Deal for Leeds City Region		
Sector	During 10-year transition	Long-term
Reuse and recycling	2,222	4,445
Transport	3,253	6,505
Building retrofit	21,381	2,912
Renewable energy	1,765	163
Training and support	1,821	1,574
Total	30,442	15,599

Table 1: Job creation under a green new deal

These jobs would facilitate a transition to a more circular and resilient Leeds City Region economy. They would bring about a transformation of energy generation; large scale retrofitting of the region’s housing to make our homes highly energy-efficient; re-using and recycling of most of what is currently thrown away; and developing zero carbon, sustainable transport systems.

GALBA's vision is for a future employment plan that would offer a far more positive future for communities in the Leeds region, based around the employment of workers in Green jobs, provision of the services people desperately need, and the protection of our environment (see Figure 1).



Figure 1: Potential green jobs by Local Authority

Contents

	What is GALBA?	1
	Our Greener Vision	2
	Executive Summary	3
1	The background to proposed Leeds Bradford Airport expansion	6
2	What's the problem? Aviation in the climate crisis	7
	<i>Emissions footprint of aviation</i>	7
	<i>Aviation taxation and trends in airport design</i>	8
	<i>Jet Zero consultation</i>	8
3	What's the problem? The pandemic and the economy	9
	<i>The impact of COVID on jobs</i>	9
	<i>The impact of COVID on air travel</i>	9
4	Environment versus Economy – what next?	10
5	Leeds Bradford Airport expansion	11
	<i>What does LBA want to do?</i>	11
	<i>How many jobs does LBA claim?</i>	11
	<i>Are the jobs real? A critique of the LBA strategy</i>	14
6	An active transition to a green economy	21
	<i>Why do we need a green new deal?</i>	21
	<i>How many green jobs could be created?</i>	22
	<i>Practical examples</i>	27
	<i>Induced and wider impacts – a sustainable circular economy</i>	30
	<i>What needs to happen?</i>	30
7	Summary of findings	32
8	Conclusion	34
	Annexes	35
	<i>Annex One: Aviation in the climate crisis</i>	36
	<i>Annex Two: The impact of COVID on jobs</i>	39
	<i>Annex Three: What does the Leeds City Region say about environment and the economy?</i>	42
	<i>Annex Four: Climate job potential of a ten-year Green New Deal for the Leeds City Region</i>	47
	<i>Glossary of terms used</i>	59

1 The background to proposed Leeds Bradford Airport expansion

In May 2020, Leeds Bradford Airport (LBA) made a planning application seeking permission to:

- Build a new terminal at the airport
- Extend flying times
- Undertake a number of related infrastructure changes
- Expand passenger numbers to 7 million per annum (an increase of 75% on 2019 numbers)

This application was heard by Leeds City Council's City Plans Panel (CPP) on 11th March 2021 and provisional approval given.

Supporting the application, LBA (through their consultants York Aviation), included a socio-economic assessment around the anticipated creation of jobs both at the airport and as a result of the expansion of its activities, brought about via the improved facilities and the extension of flying times and the increase in flights as a result.

In response, GALBA commissioned the New Economics Foundation (NEF) to review the socio-economic assessment. A report was produced and published in September 2020. Subsequently Leeds City Council asked Volterra to undertake a review of all the arguments put forward (November 2020). NEF responded to this commentary (December 2020). Volterra made further points (February 2021) and NEF made a final summary to the CPP later in February 2021. This report draws on some of those documents.

GALBA asked the Secretary of State at the time, Robert Jenrick, to hold a public inquiry into LBA expansion. He postponed making a decision, and we have yet to hear from his successor Michael Gove. It is worth noting that LBA is one of nine regional airports seeking to expand. In the current absence of a clear national aviation strategy, each is at a different stage of the planning process. GALBA opposes all airport expansion plans. GALBA believes that the LBA expansion plan is both a crucial local issue and one that needs to recognise the national picture. This report seeks to reflect that.

2 What's the problem? Aviation in the climate crisis

Emissions footprint of aviation

The International Civil Aviation Organisation (ICAO) has forecast aviation emissions will grow by over 300% by 2050 without additional measures to control expansion and find alternative, non-fossil fuels.¹ Increased flying also increases other non-CO2 pollutants such as nitrous oxide and water vapour contrails. CO2 accounts for only one third of aviation's climate heating effects, two thirds comes from these non-CO2 pollutants.² In the UK, aviation emissions accounted for 7% of UK greenhouse gas emissions in 2018 (88% above 1990 levels).³



British Airways Boeing 747 contrail by revedavion.com licensed under CC BY-SA 2.0

Flying is one of the most difficult sectors of the economy to decarbonise because there are currently almost no alternative fuels to the fossil fuel, kerosene, which aircraft need to power them. The Climate Change Committee (CCC) (expert advisers to the UK government) has recently warned: “*Aviation is likely to be the largest emitting sector in the UK by 2050, even with strong progress on technology and limiting demand.*”⁴

The emissions footprint of aviation is not shared out equally amongst the UK population. Research has repeatedly revealed the dominance of frequent flyers. Figures published in a Department for Transport survey in 2018 revealed that the 10% most frequent flyers in England took more than half of all international flights.

1 <https://www.transportenvironment.org/discover/decarbonisation-aviation-why-eu-and-icao-action-needed/>

2 <https://www.sciencedirect.com/science/article/pii/S1352231020305689>

3 <https://www.greenhousethinktank.org/transport-investment.html>

4 <https://www.theccc.org.uk/publication/letter-international-aviation-and-shipping/>

By contrast, 48% of the population did not take a single flight abroad in that year.⁵

Offsetting is not an effective method of reducing emissions.⁶ There is no comparison between emitting carbon now and planting trees that only grow and become effective years later - far too late to address the immediate emergency. Research shows that 85% of claimed offsets never materialise in reality, with many at risk of being consumed by woodland fires, rendering them ineffective. Offsetting also has the counterproductive effect of making people think their emissions don't actually damage the climate, and that 'paying for offsets' is a legitimate strategy for avoiding climate impact.

Aviation taxation and trends in airport design

The aviation industry is uniquely privileged in the UK tax system. No VAT is applied to ticket transactions, there is no tax on fossil fuels used to fly planes (unlike petrol for cars) and the government is reducing domestic Air Passenger Duty. It has been estimated that these tax breaks amount to a taxpayer subsidy for aviation of around £7 billion per year.⁷

This suggests the need for an urgent review of the taxation system to incentivise the move to low carbon travel.⁸

Jet Zero Consultation

In the context of the above, the government has recently issued its Jet Zero consultation stating "*our ambition to decarbonise includes every sector of our economy... [aviation] is forecast to become the second highest residual emitter in 2050 as other sectors reduce their emissions. Despite aviation being one of the most challenging sectors to decarbonise, we are clear that it will play its part in ensuring the UK reaches net zero.*"⁹

It is not yet known how the consultation on Jet Zero will influence the government's position on the industry, nor precisely what 'play its part' actually means.

There's more detail on aviation in the climate crisis in Annex One.

5 The Guardian, 2019

6 <https://www.transportenvironment.org/discover/85-offsets-failed-reduce-emissions-says-eu-study/>

7 <https://neweconomics.org/2020/06/crisis-support-to-aviation-and-the-right-to-retrain>

8 <https://www.aef.org.uk/2021/10/18/reform-aviation-taxation-to-accurately-reflect-aviations-environmental-cost-campaigners-tell-treasury/>

9 Jet Zero consultation, July 2021

3 What's the problem? The pandemic and the economy

The impact of COVID on jobs

As with the rest of the country, Leeds City Region was hit hard by the pandemic. Over 110,000 people were claiming unemployment benefit in July 2021 with a disproportionate impact on younger people.

This masked, however, the number on furlough, many of whom are at risk of redundancy as the furlough scheme comes to an end. This represents a further 60,000 people in the region. There are also variations between local areas with Bradford being particularly hard hit.

The impact of COVID on air travel

Consultants McKinsey looked at the global situation for aviation. They note that leisure travel – subject to any travel restrictions still in place – is likely to recover first. However, business travel is only anticipated to return to 80% pre-pandemic levels by 2024. COVID impacts will, however, have a greater impact on all air travel as “*staggering debt levels will lead to ticket price increases and a larger role for government in the sector*”.¹⁰ In other words, aviation will be dependent on even greater levels of subsidy than before, making it a precarious industry in which to seek a career.

Accountancy Daily noted that at the end of June 2021, “*58% of passenger air transport and 49% of travel agency staff were still on furlough*” – amounting to 1.9m people across the UK.¹¹

In terms of the size of impact on jobs, there are 3655 jobs in the air transport sector in Leeds City region.¹² LBA's planning application suggested that 2400 of these were directly supported by LBA activities, although the Yorkshire Post reported a loss of over 100 of the 400 directly employed jobs in July 2020.¹³ Furlough figures above suggest that many more are still at risk.

There is more detail on the impact of COVID on jobs at Annex Two, including unemployment and furlough rates. In Annex Three, we outline what Leeds City Region Strategic Economic Plan and related documents say about the environment and the economy.

10 <https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/back-to-the-future-airline-sector-poised-for-change-post-covid-19>

11 <https://www.accountancydaily.co/half-aviation-and-tourism-staff-still-furlough>

12 ONS NOMIS Business Register & Employment Survey

13 <https://www.yorkshireeveningpost.co.uk/news/transport/leeds-bradford-airport-cut-quarter-its-workforce-more-100-jobs-set-go-2907400>

4 Environment versus Economy – what's next?

The strategic view of climate and the economy across the region (as detailed in Annex Three) highlights the fact that policy objectives in these areas are not clearly linked, but it also shows the continued misconception that there is a disconnect between these two goals. Whilst policy documents are increasingly (at least verbally) strengthening their resolve on the climate emergency, the actions put forward are not keeping pace. This is particularly true of aviation where policy statements are few and far between, and largely focus on ensuring easy surface access to LBA.

It is clear from the preceding sections that there should be two over-riding objectives for any strategy for Leeds Bradford Airport.

- Firstly, the North is underperforming economically¹⁴ and there is a need for safe, secure, interesting and useful work in Leeds City Region.
- Secondly, given the urgency expressed by the recent IPCC report¹⁵ and the work of the government's own Climate Change Committee¹⁶, the aviation industry must play its part in reducing greenhouse gas emissions; and as a nation, we need to refocus our economy on measures that address global warming.

GALBA believes that the scenario put forward by LBA in its planning application is only one of a number of possible futures, and that the claims put forward take an unrealistically optimistic view of the industry's technical and economic position and capabilities.

In the sections below, GALBA critically evaluates the LBA expansion plan and demonstrates the feasibility of an alternative approach focussed on an active transition to greener jobs.

14 <https://www.transportforthenorth.com/wp-content/uploads/Northern-Powerhouse-Independent-Economic-Review-Executive-Summary.pdf>

15 https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM_final.pdf

16 <https://www.theccc.org.uk/publication/independent-assessment-of-uk-climate-risk/>

5 Leeds Bradford Airport Expansion

What does LBA want to do?

In May 2020 - despite the impact of the pandemic on aviation and Leeds City Council's declaration of a climate emergency - LBA's owners submitted a planning application that sought permission to:

- Build a new passenger terminal
- Extend daytime flying hours by 90 minutes
- Remove the overall limit on night time flying
- Reduce controls on night time noise
- Make ancillary changes to car parking and other facilities
- Support expansion of passenger numbers to 7 million per annum by 2030 (an increase of 75% on 2019 levels)

How many jobs does LBA claim?

For the purposes of the application process, jobs are described as below¹⁷ :

- Direct: These are people who are employed directly by or within LBA (a relatively small number of the whole).
- Indirect: This means people who are employed in the airport's supply chain.
- Induced: These are jobs that exist as a result of the above jobs and activity. For example, the fact that people are working at and around the airport means they spend money they would not otherwise have. In addition, other businesses may be enabled to expand as a result of the airport's existence creating further jobs. Part of LBA's application relies on this latter via the North-West Leeds 'employment hub'.
- Wider Impact: Finally, this last category is an economic term to mean the generalised impact on the wider economy of having an airport in this location. For example, agglomeration – a type of 'wider impact' – is the effect / cost saving of having businesses located more closely together that benefits them all.

¹⁷ See example at <https://www.e-education.psu.edu/marcellus/node/708>

In this 'wider impacts' category, the airport – via better links to other locations – may impact the wider Yorkshire economy. The airport also talks about the economic impact of inbound tourism, e.g. visitors from abroad staying in West Yorkshire or traveling to the Yorkshire Dales, who will spend money on travel, food, hotels and so on.

It is thus important to distinguish those jobs that are directly within LBA's control and those that are assumed to occur as a result of its activities.

Pre-pandemic 2019 position

LBA's current (2020) planning application says that in 2019, the airport directly supported around 2,410 full time equivalent (FTE) jobs on site.¹⁸ Additional estimates of indirect, induced and 'wider impact' job creation are shown in Table 3.

Nearly half the jobs discussed are therefore made up of these wider impacts. Whilst 'direct' above includes jobs 'supported' by LBA, the number directly employed may be much smaller.

LBA figures (2019)	Leeds	Leeds City Region	% of whole (LCR)
	<i>Numbers of FTE</i>		
Direct	2410		32
Indirect	710	1680	23
Induced			
Wider Impact	3120	3330	45
Total	6240	7420	100

Table 2: LBA jobs 2019

¹⁸ Leeds City Plans Panel, Economic Statement, Section 11.7.28, p 37

All documents relating to the planning decision can be found at <https://publicaccess.leeds.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=Q9SM3LJBKXX00>, Planning reference 20/O2559/FU

'With development' position

LBA argues that the developments are needed to meet the future demand for air travel.

LBA job projections with development:

(Assumes 5.2 and 7m ppa respectively)

LBA figures	Leeds city region 2024	Leeds City Region 2030	2030 % increase over 2019
	<i>Numbers of FTE</i>		
Direct	2920	3870	61
Indirect	2100	2970	77
Induced			
Wider Impact	4310	5810	75
Total	9330	12650	70

Table 3: LBA jobs projections with development

The assumption is that with passenger numbers growing from 4m per annum to 7m, there will be a linear growth across all categories of job. LBA simply assumes that growth will restart post-COVID and it is assumed that job density will increase. These elements are discussed in the critique later in this section.

The key projection from LBA for our purposes – and for Leeds City Region citizens – is that direct employment would increase by 1,460, from 2,410 to 3,870, between 2019 and 2030. Even this is a significant over estimate as will be clear from our discussion in this report.

What are the jobs?

There is a limited amount of detail about the nature of jobs that LBA says will be created. However, the LBA 2017 Master Plan describes three elements which could deliver jobs:

- Airport Village – A new mixed use commercial centre providing vital services and accommodation to support the growth of the airport... such as flight operating company (regional) headquarters and support functions, hospitality and general amenities (comprising new hotels, conference and meeting facilities and restaurants and retail).
- Air Innovation Park – A Business Park providing accommodation for occupiers in identified Leeds City Region (LCR) growth sectors... with a focus

on innovation and incubation facilities with strong links to University-based research & development.

- Air Freight Park – New industrial accommodation to serve the growth in demand anticipated from an increase in air freight cargos. This will include direct access to the airside boundary required to facilitate the transfer on and off aircraft, caterers, repair and support functions.”

Are the jobs real? A critique of the LBA strategy

Regardless of how we categorise jobs at the airport, the question is how many of the jobs claimed would be created by the expansion of LBA?

The aviation industry places a heavy emphasis on ever-increasing efficiency, which means a reduction in job density (i.e. the ratio of aviation workers to passengers). This makes it incorrect to assume a linear relationship between jobs and passenger numbers.

Directly supported jobs, job intensity and automation

LBA has a high proportion of staff per passenger relative to other airports. This has been explained by factors that are specific to LBA such as the existence of a major airline – Jet 2 – being headquartered there in Leeds.

NEF estimate that LBA’s job creation claims have been overestimated by around 33%. NEF point out that: *“Employment in the aviation sector is in flux. Over the past decade the employment intensity of the sector (i.e. the number of jobs per passenger) has been falling consistently over time as the sector utilises automation and other efficiency improving measures to reduce employment costs. Indeed, the job intensity of the sector fell by around 2.6% per year between 2001 and 2018... As an airport increases in size, its employment intensity will generally fall as it is able to make efficiency savings on a per-passenger basis.”*¹⁹ This is consistent with what LBA’s 2017 Master Plan has to say about planned automation of its operations: *“Through the installation of boarding card readers, automated check-in... we can provide improved facilities and services to new passenger markets. Technological advances in online bookings and smart ticketing provide departing passengers with a more seamless and effortless journey.”*²⁰

In fact, York Aviation themselves – within the planning application - note that much of the business case is driven by time savings: *“These times are formed of the weighted averages of passengers who avail of quicker self-service technologies, such as self-service check-in kiosks and electronic immigration gates, and those who use conventional non-automated processors. The overall time savings for departing and arriving passengers using the new terminal is considerable compared to the existing terminal.”*²¹ Whilst time savings are clearly a benefit to passengers, it is largely a result of automated processes which – like supermarket self-service checkout machines – require much lower staffing levels per customer.

19 NEF: ‘Supplementary Analysis on the Economic Case for Expansion of Leeds Bradford Airport’, July 2020, p15

20 <https://www.leedsbradfordairport.co.uk/the-latest/update-route-to-2030-strategic-development-plan>, p32

21 York Aviation, Appendix 11.1 Economic Impact Report, p79

NEF’s report goes on to question LBA’s forecasts of direct job creation for two reasons:

“First, their job intensities in 2030 remain very high, much higher than airports of a similar size. Bristol airport, which is just over double the size of LBA by passenger numbers, only provided 433 jobs per million passengers in 2018. LBA claims it will provide around 600 jobs per million passengers in 2030 when it reaches a size comparable with Bristol... The second issue is that [LBA] appears to forecast an increase in the job intensity of the airport (i.e. more jobs per passenger) with the expansion of the airport in 2030. This does not seem credible as a key feature of airport infrastructure enhancement is to improve efficiencies and enable greater returns-to-scale. As such, job intensities rising by 7% seems unlikely... NEF modelling utilising data on recent job trends estimates the likely job intensity at LBA would be 18% lower in 2030 than forecast.”²²

The report concludes: *“NEF modelling suggests the likely job creation potential is at least 33% lower than forecast.”²³*

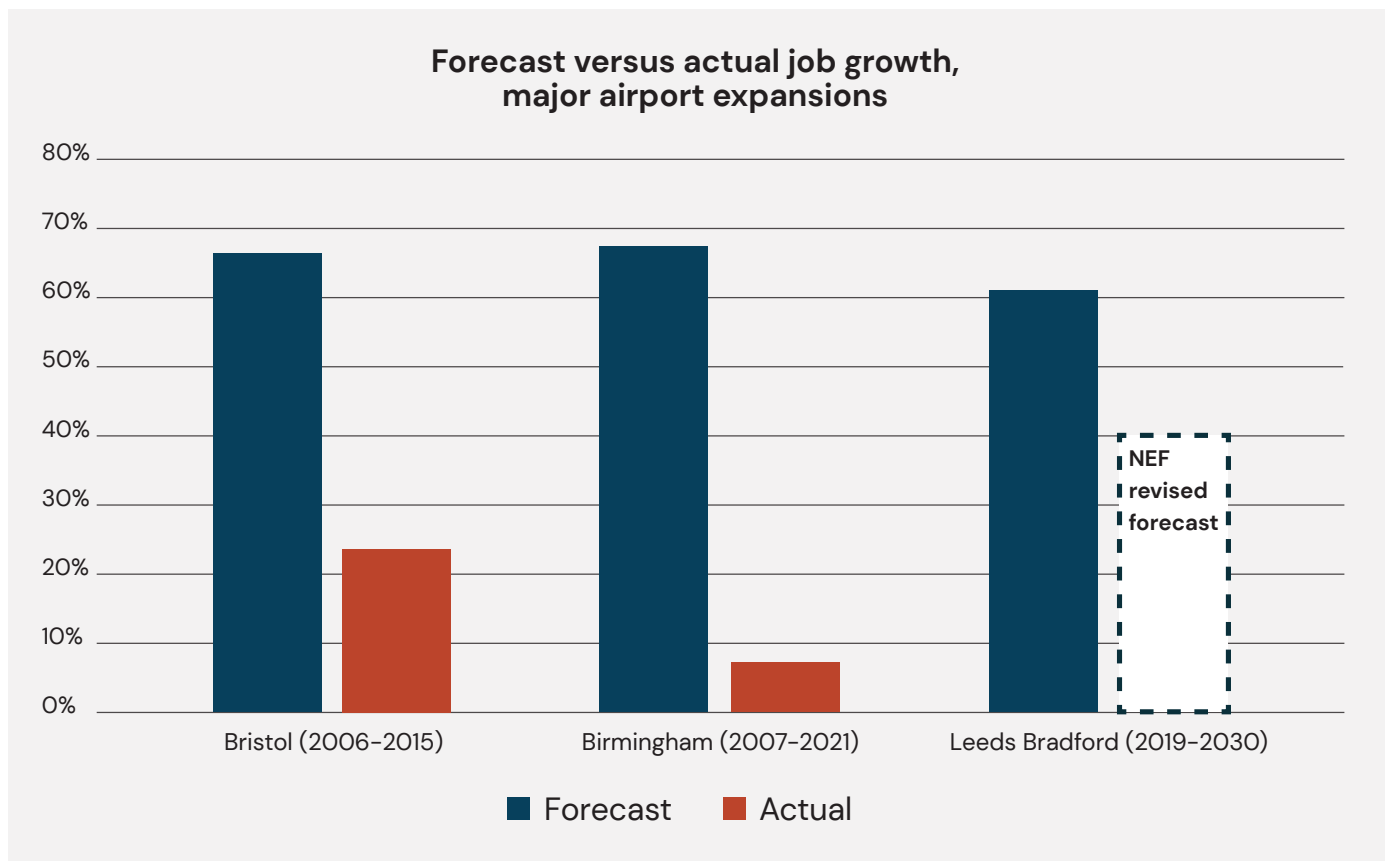


Figure 2: Airport expansion - forecast versus actual jobs

22 NEF: ‘Supplementary Analysis on the Economic Case for Expansion of Leeds Bradford Airport’, July 2020, p16

23 Ibid, p6

Empirical evidence based on actual UK airport expansions and the previous claims for job increases made by developers shows the claims to be grossly exaggerated.

A classic case is that of Manchester Airport:

“When Manchester Airport announced in 1991 that it wanted to build a second runway, the Chairman of the Airport company claimed that this would create 50,000 new jobs. A subsequent report, presented by the Airport to the public inquiry, revised the figure to 18,000 new jobs. This figure included indirect and induced employment, and employment in firms which would be attracted to the Manchester area. It also included jobs created by inward tourism - without taking account of outward tourism. The media continued to use the 50,000 figure, and indeed it was repeated by the airport chief executive in 1997 after planning permission was granted. In the real world, the runway was built, and opened in 2001. The total number of jobs at the airport in 2006 was 4,000 more than ten years previously. Even adding indirect and induced employment at the usually quoted ratios, the increase would be around 6,400. It is obvious that the figure of 50,000 extra jobs was a flight of fancy.”²⁴

More recent examples include Birmingham Airport, whose 2007 Master Plan estimated the number of jobs it supported would increase by two thirds by 2021 (though it did not make a forecast for direct employment specifically).²⁵ Since then, the number directly employed has risen from 7,500 to 8,050 a rise of just 7%.²⁶ Bristol Airport’s 2006 Master Plan also forecast an increase in direct employment of two thirds.²⁷ In reality, direct employment rose from 2,284 to 2,800, a rise of just 23%.²⁸

Like the Manchester Airport example, inflated job creation figures in the tens of thousands often belie a significant reliance on indirect and induced employment. These knock-on benefits would be delivered under alternative investment programmes, especially the economy-wide Green New Deal proposed in this paper. Further, for LBA and many others, the number of indirect and induced jobs has been calculated as a multiplier of the number of direct jobs. If these direct jobs are actually much lower, so also are the number of indirect and induced jobs. Nearly two thirds of the jobs claimed as a benefit of airport extension fall into this latter category of assumed job creation.

Passenger forecasts

We have noted earlier that forecasts were made pre-pandemic, and whilst LBA have acknowledged the dip in projections, growth is simply assumed to restart. None of the following factors are taken into account:

24 https://www.aef.org.uk/uploads/Airport_jobs___false_hopes_cruel_hoax.pdf, p11

25 <https://authoring.birminghamairport.co.uk/media/2938/2007-airport-masterplancompressed.pdf>

26 The 7,500 figure is taken from the 2007 Master Plan. The 8,050 figure is taken from Acuity Analysis: ‘Economic and social importance of the UK’s regional airports’, 2020, p.5.

27 “The forecasts indicate around 63% growth in airport related employment to 2015.” Bristol International Airport: Master Plan 2006–2030, 2006, p.38.

28 York Aviation: ‘Bristol Airport Limited Part 1 (Strategic) Economic Impact Assessment of Bristol Airport’, 2007, p.26.

- leisure passengers may choose to travel less by plane for climate change reasons but also because of infection fears which are unlikely to disappear any time soon
- business people will travel less given the success of electronic meeting technology
- people may take fewer holidays abroad given the weakness of the economy
- it is highly likely that fare prices will increase given the weakness of the aviation industry

These forecasts are critical since projections of jobs created by LBA are directly correlated with passenger numbers, so if passenger numbers are lower, so are the numbers of jobs created.

The North West employment hub

As noted earlier, the Hub is anticipated to include a mixed-use commercial centre including hospitality and conference facilities; an innovation hub; and a freight centre. Despite this being mooted in 2017, there is still very little information available publicly.

It appears a misguided strategy given two key factors:

- Very little of LBA's patronage is for business travellers and the majority of tourism is outbound, which does not immediately imply a need or demand for business or hospitality facilities as provided by the 'airport village'
- LBA is notoriously badly served by surface transport. Whilst there are plans to enhance public transport access, this is unlikely to attract businesses that rely on good access, but more critically makes it a very poor site for freight (LBA does not currently support air freight transit)

There is a suggestion that there is limited availability of land in Northwest Leeds, so there may be opportunities for businesses and other sectors such as University-based R&D to use the site. However, whether this enables new jobs or merely displaces existing ones is not yet known. In any event the demand for such a hub is independent of the application to expand the airport.

The impact of tourism

One of the more inconsistent elements of the LBA planning application was the treatment of inbound tourism as an economic benefit whilst ignoring the parallel disbenefit of outbound tourism.

It is true that there is a strong economic benefit to Leeds City Region from inbound tourism, with the proximity of the cities of Leeds and Bradford, and easy access to York, the Yorkshire Dales and the North York Moors. This will have a wider impact on the economy as those visitors will spend money in hotels, tourist attractions, bars and restaurants.

By extension, it must also be true that the 76% of travellers from Leeds Bradford Airport going to destinations such as Malaga, Faro or Tenerife, are spending money

outside the Leeds City Region, and thereby acting as a disbenefit to the economy, however desirable they may be as holiday destinations (see *Figure 3*).

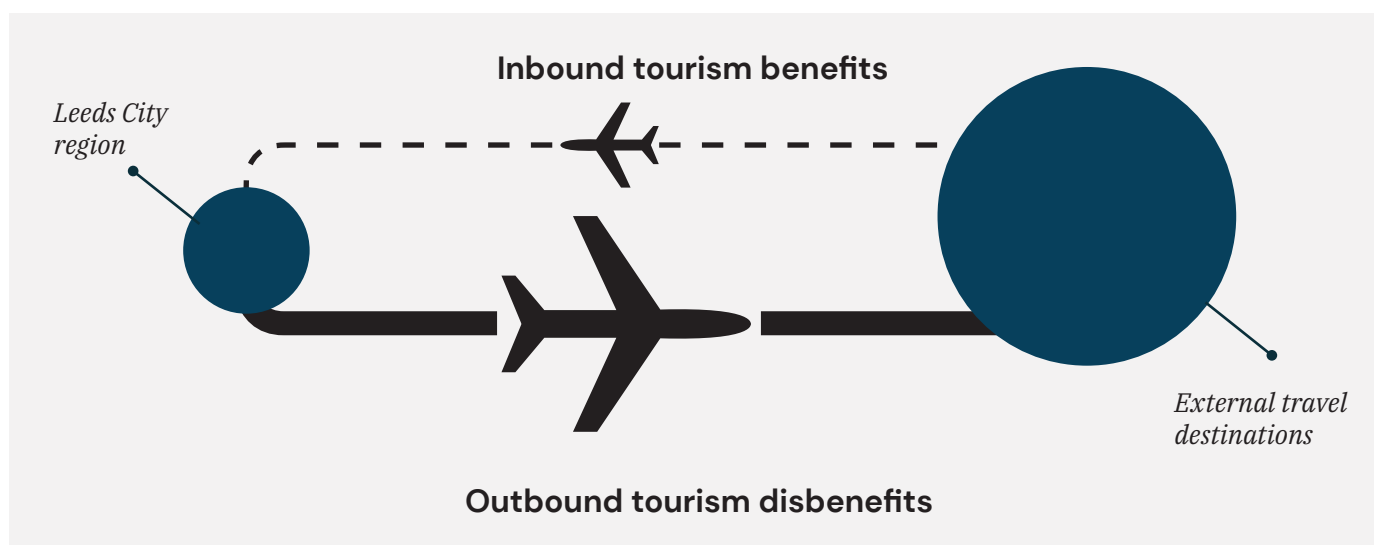


Figure 3: Inbound versus outbound tourism

Recent research by Barclays says that “23 million Brits will holiday in the UK this summer – adding almost £31 billion to UK GDP (Gross Domestic Product).”²⁹ It must cast doubt, therefore, on LBA’s jobs calculations if the converse economic disbenefit has been ignored.

The impact of climate change on the economy

Climate scientists from the University of Leeds have assessed the quantity of emissions that will result from aircraft using LBA if it expands to 7 million passengers per year by 2030.³⁰ They concluded that 1227kt CO₂e would be emitted per year. To put this in context, 1227kt CO₂e³¹ is larger than the entire carbon budget for the whole of the district of Leeds from 2030 onwards.³²

From an economic perspective, there is a great deal of detail in the NEF reports about how displacement has been treated and which factors have been monetised. The cost to Leeds City Region of carbon emissions from an expanded airport was conservatively estimated to be £267,100,000 from 2024 to 2050.³³ Recent research has suggested that the cost to the UK economy may be very significant. Dr Chris Brierley of University College, London has noted that most economic models assume

29 <https://home.barclays/news/press-releases/2021/05/The-billion-pound-boom--UK-staycationers-set-to-boost-local-economies/>

30 <https://www.galba.uk/university-of-leeds-lba-objection>

31 CO₂e = carbon dioxide or its equivalent impact from other greenhouse gases

32 <https://leedsclimate.org.uk/news/climate-commission-shows-moving-net-zero-emissions-can-help-leeds%E2%80%99-post-covid-recovery> - see graphs for Leeds science based carbon reduction targets in ‘A net zero carbon roadmap for Leeds’. January 2021

33 p28, ‘Supplementary Analysis on the economic case for expansion of Leeds Bradford Airport’, NEF, September 2020

that there will be no impact of climate change on economic growth, but this is highly unlikely to be the case. It is thus more robust for any economic assessment to take account of this disbenefit in its business case.

Since LBA's planning application was approved, the Department for Business, Energy and Industrial Strategy (BEIS) has published new carbon values.³⁴ These indicate what BEIS expects the price of carbon to be and provide the values that should be used in cost-benefit analyses of new projects. BEIS states that: "*A project that increases or decreases greenhouse gases domestically or internationally relative to a 'business as usual' scenario is required to quantify the change in emissions, and then apply the carbon values*". In another recent document, BEIS is explicitly clear that its approach to carbon valuation applies to planning decisions, such as LBA's application to Leeds City Council.³⁵

Carbon values are the way the government wants decision makers to consider and calculate the financial costs (disbenefits) to society from each tonne of carbon emitted when making a cost-benefit analysis of proposed new projects, like LBA expansion. In August 2021, BEIS more than tripled these carbon values, so now the cost of one tonne of CO₂ in 2030 has risen from £81 to £280. This means the financial cost (disbenefit) of every tonne of carbon caused by an expanded airport has also more than tripled. Obviously, this significantly undermines the claimed economic benefits for LCR from LBA expansion.

The recent UCL (University College, London) study suggests that the cost of the actual economic damage could in fact be over 3,000 US dollars per tonne of CO₂ (£2200)³⁶, making any airport expansion a non-starter economically. This is not to be defeatist, but to be clear that we must find a different route to job security that is both economically and environmentally sustainable.

Summary of critique

The LBA planning application essentially rests on both the assumption that passenger numbers will grow to 7 million per annum, but also that this is desirable economically and will lead to increased jobs. It does not deal with the carbon cost.

In addition, LBA appears to be saying that there would be more jobs per passenger than at present. This is at odds with wider trends in airport design where moves to greater digitalisation and automation mean there will be fewer jobs per passenger, as machines and customers perform the tasks that used to be carried out by employees. These trends are likely to interact with the pandemic's impacts to reduce employment. It seems very unlikely, therefore, that aviation industry job forecasts, based on aviation growth models, will be matched in reality. While LBA will continue to operate, the economically unhealthy dependency of Leeds and the LCR on LBA's growth needs to be avoided.

34 <https://www.gov.uk/government/publications/valuing-greenhouse-gas-emissions-in-policy-appraisal/valuation-of-greenhouse-gas-emissions-for-policy-appraisal-and-evaluation>

35 <https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal>

36 <https://www.ucl.ac.uk/news/2021/sep/economic-cost-climate-change-could-be-six-times-higher-previously-thought>

The fact that there are inherent risks to the strategy of airport growth is no comfort to those who have lost their jobs, or to future workers who may have been looking to the airport for work, but the LBA route to jobs is insecure and exaggerated. It gives all the more reason to chart a different pathway for the future of Leeds City Region, one that does not depend on continued LBA growth. We need to offer aviation workers secure pathways into new careers that use the wealth of their skills and knowledge, and provide interesting, useful and sustainable employment.

6 Active transition to a green economy

Why do we need a green new deal?

The Climate Change Committee (CCC) is an independent, statutory body established under the Climate Change Act 2008, which reports to the UK government. Its most recent report declared ten principles that the UK must adopt to respond effectively to climate change.



Wind power by CGP Grey is licensed under CC BY 2.0

The two underpinning ones are:

- Develop a vision for a well-adapted UK
- Funding, resourcing, metrics and research³⁷

The vision is critical since many people are understandably cautious about ‘the next big thing’ and want realistic and secure plans for their future. NEF note that *“workers and trade unions are understandably sceptical of the rhetoric around transition, given that past transitions – notably the decline of mining and manufacturing – have scarred communities and left a trail of social and economic destruction in their wake.”*³⁸ Furthermore, they note that *“360,000 jobs – 15% of all jobs in the Yorkshire and Humber region – are in sectors that have high or very high emissions, meaning that these jobs are likely to be affected by the move to a low carbon economy”*. LBA’s aviation workers are in the front line of those most at risk.

37 <https://www.theccc.org.uk/wp-content/uploads/2021/07/Independent-Assessment-of-UK-Climate-Risk-Advice-to-Govt-for-CCRA3-CCC.pdf>, p12

38 <https://neweconomics.org/2021/06/powering-the-just-transition>, p3



An active green transition recognises this and aims to proactively address the needs of those workers in at-risk jobs.

It is easy to see the climate emergency as all doom and gloom, but this is very different to the miners in the 1980s, whose fate was entirely attributable to political factors and for whom no contingent plans were made to save their communities. By contrast, combating climate change requires the skills and expertise of hundreds of thousands of us working to insulate homes, provide better public transport, greener energy, and sustainable farms, as well as caring and reliable social care, early years education and leisure facilities. Planning such developments rather than abandoning workers is precisely the point of a Green New Deal.

To take CCC's second principle, though, this needs a rethink of where we - as a society - invest public money, who we tax and where we offer incentives, and what safety nets we provide for those reskilling

for the new jobs we all need. In the section below, we discuss in more detail what this means for Leeds City Region.

How many green jobs could be created?

Much of the work to transition the UK to a zero-carbon society is yet to be done. Talk of a 'zero carbon army' is not hyperbole - a fair Paris Agreement pathway for the UK will necessitate "*a scale of change in physical infrastructure reminiscent of the post-Second World War Marshall Plan*".³⁹

The extraordinary employment potential of an economy-wide Green New Deal for Leeds City Region is shown below, with direct job creation potential of over 30,000 over the course of a ten-year transition. Including care work as a critical part of a healthier, low-carbon future adds an additional 11,000.

GALBA has consulted with Green House think tank, who have developed a model for the jobs required in the UK workforce to move to a net zero economy. The results of this model were published in a 2018 study, 'Unlocking the Job Potential of Zero Carbon', by the Green European Foundation.⁴⁰ The model estimates the jobs requirements to reach net zero by 2030 across key sectors, on a bottom-up basis – that is, according to a particular area's needs and capacity. All sectors below are based on this research except for nature restoration and care, which are both from

39 Anderson et al. (2020) A factor of two: how the mitigation plans of 'climate progressive' nations fall far short of Paris-compliant pathways.

40 Green European Foundation (2018) Unlocking the Jobs Potential of Zero Carbon. Available at: <https://gef.eu/publication/unlocking-the-potential-of-zero-carbon/>

a Green New Deal UK report ‘Green Jobs for All’ (2020).⁴¹ Each sector is explained in more detail below.

Job creation under a Green New Deal for Leeds City Region		
Sector	During 10-year transition	Long-term
Reuse and recycling	2,222	4,445
Transport	3,253	6,505
Building retrofit	21,381	2,912
Renewable energy	1,765	163
Training and support	1,821	1,574
Total	30,442	15,599

Table 4: Job creation under a Green New Deal

Reuse and Recycling

The Green House think tank model assumes a transition to reduce waste, increase reuse and recycling in line with high-ambition scenarios, with an estimate of additional jobs created by a shift to 90% recycling rates achieved by higher-value recycling in the commercial and construction sectors, and a combination of waste reduction, reuse and recycling through better sorting and new local enterprises to create a circular economy that captures most household waste. The modelling includes additional jobs in recycling collection and jobs lost in landfill. Additional jobs in reuse and remanufacturing are not included. The transition job estimate is that midway to the long-term shift.

Home Energy Retrofits

These jobs include both insulation improvements and retrofitting renewable energy technologies (e.g. solar hot water, solar photovoltaics (PV – solar panels), heat pumps) on domestic properties. This is a standard rate of retrofit for the 10-year transition then caretaking/maintenance works thereafter. There will be additional jobs created retrofitting commercial and public sector buildings.

⁴¹ <https://www.greennewdealuk.org/updates/green-jobs-for-all-report/>



Sustainable Transport

The Green House think tank model is based on a major modal shift and accounts for jobs lost in private vehicle maintenance (as electric vehicles require less maintenance) as well as jobs gained in driving and maintaining trains and buses. Jobs in infrastructure (e.g. building cycle routes, electrifying the rail network, installing vehicle charging points) are not included and would be additional. The jobs will increase as the modal shift occurs, and the transition estimate is mid-way to the long-term total.

Renewable Energy Generation

Jobs in renewable energy generation are based on national estimates scaled according to the size of areas classed as rural within the Leeds City Region. The estimate assumes a steady rate of wind and solar PV installation over the ten-year period.

Training and Support

The Green House think tank model made an estimate of the additional jobs required in training and support to deliver the necessary levels of upskilling across the economy and ensure that work is accessible.

Food and Farming

Jobs in local sustainable food production are crucial to a shift to a sustainable future. Although they have not been included, because the job creation potential is difficult to estimate, there could be many hundreds.

Care

Green jobs can be thought of in a much broader sense. Many forms of work have been systematically undervalued but are low carbon in nature and essential to a healthy future economy. Care work sustains life and is heavily labour-intensive, creating three times the number of jobs as equivalent investment in construction.

Despite this social care in many parts of the UK is in crisis, with underfunded councils presiding over endemic turnover in a poorly paid workforce. The Women's Budget Group has found there are over 1.4m older people with unmet care needs, and that investing an additional 1% of GDP in the care sector while doubling wages would directly create an additional 246,000 full-time equivalent jobs. Scaled to Leeds City Region by population, this gives a job creation potential of 11,400.⁴²

Teaching and Nursing

Investment into these understaffed and overworked roles is an essential contribution to any low-carbon economy of the future. Like care work, poor conditions and pay cause high turnover. Despite the foundational nature of this work and repeated government commitments to recruitment and recognition, there remain significant numbers of vacancies. However, we have been unable to obtain accurate vacancy figures for Leeds City Region and so they are not included above. As an example, Leeds Teaching Hospital NHS Trust alone had 700 nursing vacancies in October 2021.

Nature conservation

Whilst not included in our numbers, hundreds of jobs will be necessary in the region for nature conservation – tree planting and maintenance, peat recovery, hedging and much more.



Meanwood Valley Urban Farm by Laura Billings licensed under CC BY-NC 2.0

42 The Leeds City Region population of 3.1m makes up 4.6% of the entire UK population. Its share of the 246,000 potential jobs in the care sector therefore equals 11,358.

	Total transition	Long term transition
Reuse and Recycle (net)	2,222	4,445
<i>Municipial solid waste</i>	746	1,493
<i>Construction, Commercial and Industrial waste</i>	1,476	2,952
Transport	3,253	6,505
<i>Local Bus Drivers and bus maintenance</i>	3,169	6,335
<i>Railway and long distance bus operation and maintenance</i>	2,312	4,626
<i>Vehicle maintenance (net reduction in non-electric vehicles)</i>	-2,228	-4,456
Building retrofit	21,381	2,912
<i>Energy efficiency improvements</i>	9,146	2,912
<i>Solar thermal, PV and heat pumps</i>	12,235	
Renewable energy	1,765	163
<i>Loss of fossil fuel generation</i>	-112	-225
<i>Onshore wind</i>	1,196	345
<i>PV, hydro and electric grid update</i>	681	43
Training and support	1,821	1,574
Total	30,442	15,599

Table 5: Potential green jobs by sector

Leeds city region jobs breakdown		
Council area	Transition	Long term
Leeds	7,931	4,359
Bradford	4,986	2,835
Calderdale	2,986	1,525
Kirklees	3,504	1,890
Wakefield	3,530	1,882
Barnsley	2,287	1,081
York	2,002	956
Harrogate	1,457	460
Selby	721	214
Craven	1,042	396
Total	30,446*	15,598*

Table 6: Potential green jobs by Local Authority. *Difference from Table 5 due to rounding.

Practical examples

There are a number of examples across Leeds City Region and beyond of work ongoing in these sectors. Many examples are relatively small scale at this stage but demonstrate what can be achieved if these were scaled up across our region, supporting workers in all communities.

Retrofitting for warmer homes

Upgrading (retrofitting) the housing stock of Leeds to a high standard is a priority and rightly seen as such by the City Council. The benefits are clear - lower power bills for residents, a cut of the savings back to the Council for re-investment in more upgrades and also more jobs in a wide range of skills: plumbers, electricians, glaziers, pipelayers etc. Leeds has 54,000 council properties which is a relatively high number nationally. Housing associations account for many thousands more – ‘Leeds Fed’ alone has 4300 units. Bradford has 22,000 council properties as well as many housing association units. So, there is great potential for the secure employment of a wide range of workers. Leeds has already allocated around £100 million for this programme which has immediate employment consequences. It has also secured £25 million for decarbonising 38 public buildings including iconic civic buildings, leisure centres, primary schools and offices – creating 338 jobs.

What is needed is consistent investment from central government so that the Council can plan for the longer term and enjoy economies of scale. Combined with that we need to see subsidies or interest free loans for private homeowners to make the significant investment that will reduce their power bills and carbon emissions.

An inclusive transport network

Between 1990 and 2018, the UK's overall greenhouse gas emissions from transport rose by 11%, driven by increases in road freight and aviation.⁴³

As well as demand management of aviation, there are two key aspects to ground-based transport in a low carbon future. There is a need to switch from diesel vehicles to electric and hydrogen-fuelled ones for freight, but also for business and personal travel. There must also be a transfer from private car to public transport, scooters, e-bikes, walking and cycling. As well as the infrastructure changes involved, this will also generate new and ongoing jobs in the transport industry.

Buses: the shortage of HGV drivers is well known, but less well-known is the shortage of bus drivers. West Yorkshire needs around 250 drivers (10% of the total) and many bus operators are offering 'golden hellos' and other incentives to join them. The new West Yorkshire Mayor, Tracy Brabin, is looking at how the bus industry is organised in the future, with West Yorkshire Combined Authority's (WYCA) 2040 transport strategy seeking to increase bus use by 25% by 2027. Whilst targets will have been impacted by the pandemic, there is a clear ambition to bring customers back to the bus.

Bikes: when West Yorkshire's City Connect programme began in 2015, jobs were created in construction to build the cycle routes, but it also included an ongoing training and promotion programme. This involved a range of roles including training children within schools, cycling sessions being prescribed by doctors for



43 <https://www.greenhousethinktank.org/transport-investment.html>

health reasons, developing tools to aid cycling such as a journey planner and other guides, bike maintenance workshops and working with businesses to help their employees to commute by walking and cycling.

Over five years, cycle journeys increased by 2.3 million. Delivery of the planned routes was accelerated during the pandemic and West Yorkshire Combined Authority has recently been successful in obtaining a further £10m of investment.

Trains: The Transport Strategy also seeks to increase rail travel by 75%, which will demand an increase in driving, customer service, retail and commercial roles in the industry. There are a number of examples of airline pilots switching to become train drivers in other countries, given the commonality of skills and responsibility between the roles. DW – Germany’s international broadcaster – notes that German company Deutsche Bahn has been struggling to fill train driver vacancies, and Swiss-based SBB launched recruitment campaigns across Europe. They quote a recently qualified German pilot who has switched to rail: "*The task in both professions is to bring a similar number of guests safely from A to B*" Baumann said. The pay gap between a pilot and a Vienna tram driver "*isn't that significant. Now, I'm earning only marginally less than I would have gotten as a junior pilot.*" The current average pay for a UK inter city train driver is about £60,000 which is not far short of a pilot on a short haul flight (which are all the flights from LBA).

As well as new jobs, there are also opportunities to switch the focus of current jobs to low-carbon sustainability. Whilst this may not immediately create new jobs, it highlights industries where more secure and meaningful employment can be found. With greater investment in these areas, demand for workers in these sectors will rise, which is a cornerstone of GALBA’s argument. Public money must be refocussed where it is needed both for children’s livelihoods and their health and well-being.

Building new energy-efficient homes

One of the first certified ‘Passivhaus’ homes in the UK was built at Denby Dale.⁴⁴

It includes:

- Cavity wall construction
- 118m² three-bed detached house
- £141K basic build costs
- Minimal heating – using 90% less energy for space heating than the UK average



44 <https://www.greenbuildingstore.co.uk/technical-resource/denby-dale-passivhaus-uk-first-cavity-wall-passive-house/>

Induced and wider impacts – a sustainable circular economy

To maximise the benefits of this jobs boost, local authorities across the region could apply the lessons of the ‘Preston Model’. This proved how local economies are strengthened by investing in the local supply chains of key local economic ‘anchors’.⁴⁵ Applying this approach to the deep retrofitting of buildings would mean establishing local supply chains, including offsite manufacturing, material production and supply and installation across the Leeds City Region. Similarly, this could scale-up and replicate local enterprises to reuse and recycle local resources and generate renewable energy locally.

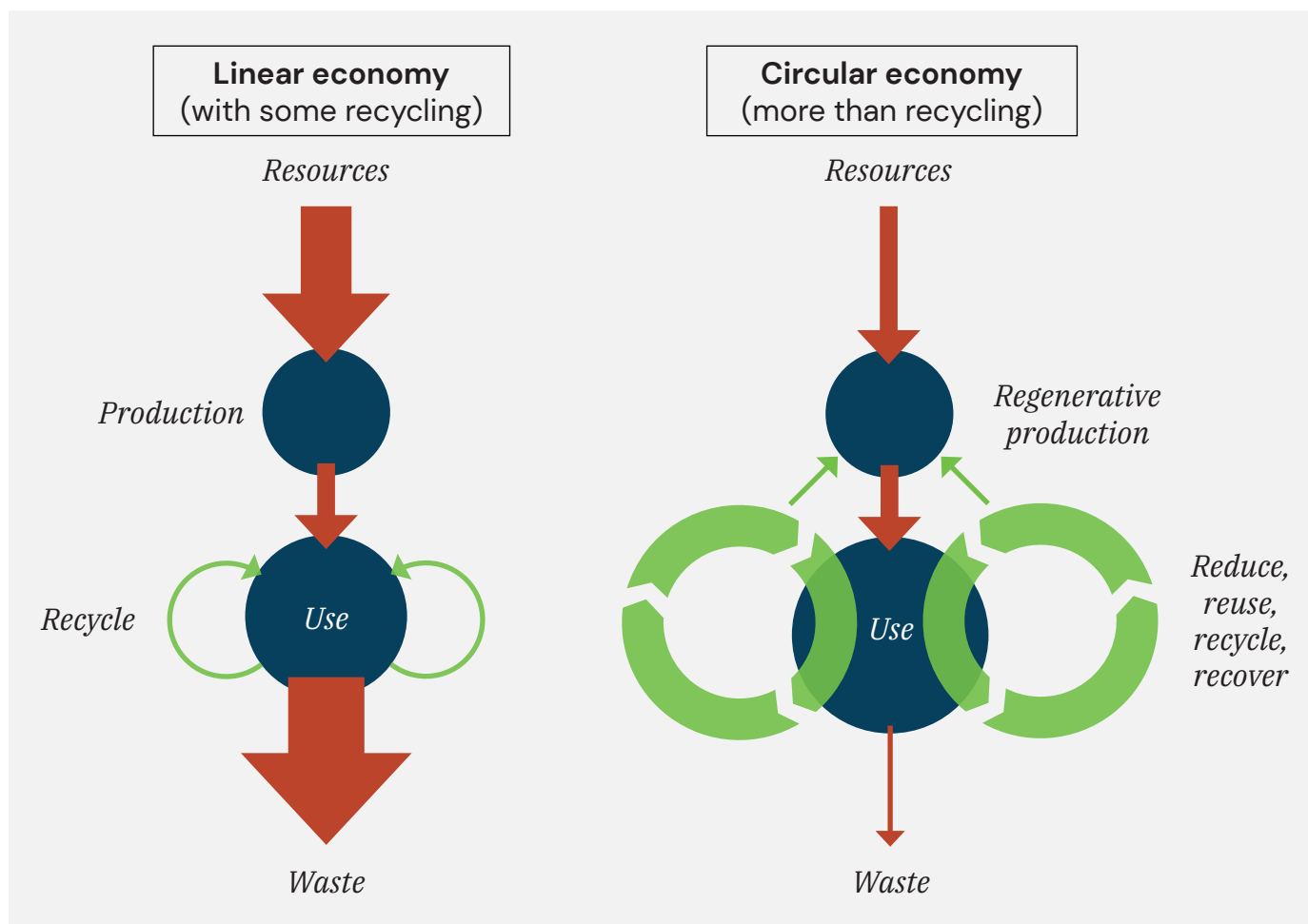


Figure 3: How the circular economy works

What needs to happen?

Much of the case for LBA expansion has been made around the creation of new jobs. As we have commented earlier, only a small proportion of these are jobs that

45 The Centre for Local Economic strategies (CLEs) helped redirect procurement across 12 ‘anchor institutions’ in Preston to local suppliers and recruitment to at least the living wage in lower income areas. The result was a revitalisation of the local economy. See CLEs, How we built community wealth in Preston (July 2019), <https://cles.org.uk/publications/how-we-built-community-wealth-in-preston-achievements-and-lessons/>

are directly employed by LBA or employed within the airport such as airline staff, retail and baggage handling. At the time of the planning application, there were said to be 2410 directly supported jobs, which with the planned expansion to 7 million passengers per annum, could rise to 3870 – an increase of 1460 jobs. Leaving aside our concerns about how realistic this figure is, putting the economic focus on a green transition could, in fact, create many times more jobs, with much greater certainty about their long-term security which would benefit communities across the Leeds City Region.

A Green New Deal could deliver 16,000 long term jobs, with around twice that during the next ten-year transition period.

Where's the money?

Much has been made of the £150m private investment proposed as part of LBA's expansion. However, leaving aside the detrimental impacts of climate change and pollution, the development will not take place without any cost to the public purse. In order to provide improved transport connections to the airport, the West Yorkshire Combined Authority has proposed an investment of £42m in a new rail station on the existing Harrogate line, including a 350-space park-and-ride car park.⁴⁶ The significant investment is explained in the context of the climate emergency, and WYCA state that the station "*seeks to meet the current demand for sustainable travel to and from Leeds Bradford Airport*". Discussions with LBA have not yet determined what (if any) contribution it will make to the scheme.

Less obvious but significantly more costly is the huge annual tax break granted to UK aviation, an effective subsidy from central government which totals approximately £7 billion every year.⁴⁷ Although Air Passenger Duty applies to flight tickets, unlike road and rail, the aviation sector is not subject to VAT and its fuel is tax free. Applying this tax break to LBA on a per passenger basis gives an effective subsidy of £94m to the airport each year.⁴⁸ This is approximately five times the size of Leeds City Council's council housing energy efficiency programme.⁴⁹ If lost VAT and fuel duty are to rise in proportion with the increased passenger numbers proposed by LBA, this subsidy would increase by 75%, to £165m a year.

A tax break so generous, giving extra benefit to the 15% of frequent flyers who take 70% of flights in the UK, cannot be justified in the context of a climate emergency. Ending the tax break using popular policies such as a Frequent Flyer Levy would both limit demand and raise critically needed funds that could be put instead to local and intra-regional public transport infrastructure, green job creation investment programmes, and a just transition for aviation workers.

46 WYCA: 'Leeds Bradford Airport Parkway Station', 2021. Available: <https://www.yourvoice.westyorks-ca.gov.uk/lba-parkway>

47 <https://neweconomics.org/2020/06/crisis-support-to-aviation-and-the-right-to-retrain>

48 The LBA share of £94m is a calculation of proportionality based on CAA data on passengers by airport, of which LBA makes up 1.34%. This assumes that LBA's receipt per passenger aligns with the UK average.

49 Leeds City Council will spend £100m over five years on the programme. <https://news.leeds.gov.uk/news/leeds-city-council-to-invest-gbp-100m-improving-energy-efficiency-of-council-housing-by-2025>

7 Summary of findings

The world is waking up to the reality of the climate crisis and realising the urgent need to make radical cuts to greenhouse gas emissions in the next 10 years. The government has, for the first time, included international aviation emissions in the UK's carbon budget. That means they are part of our new target to cut emissions by 78% by 2035⁵⁰ and to reach net zero by 2050. The West Yorkshire Combined Authority aims to make LCR net zero by 2038⁵¹ and the net zero target date for Leeds is 2030.⁵²

In its 6th Carbon Budget, the Climate Change Committee has recommended that there should be 'no net expansion' of UK airport capacity. It also states that UK airports already have capacity to increase passenger numbers by 25% from 2018 levels and recommends that this is the maximum allowed in order to reach net zero by 2050.⁵³ It's not just the experts who want to control aviation. In 2020, participants in the UK Citizens' Assembly on Climate Change "*resoundingly rejected*" the aviation industry's projections of 65% uncontrolled future growth⁵⁴ and the Leeds Climate Citizens' Jury opposed any expansion of Leeds Bradford Airport.⁵⁵

No one can accurately predict the long-term impact of the pandemic on aviation yet. The global aviation industry alliance, the International Air Transport Association (IATA), thinks passenger demand will return to 2019 levels by 2024.⁵⁶ But there is emerging evidence of lower future demand, particularly from business travellers, but also in the leisure sector. An international IATA survey in July 2020 found that 66% of respondents expected to travel less for business and leisure in a post-pandemic world.⁵⁷ A Guardian poll in 2020 found 30% of people in Great Britain said they would fly less after the pandemic (compared to 15% who said they would fly more).⁵⁸ A 2021 report in Fortune magazine reported that "*executives prefer video meetings*" so demand from business travellers is likely to remain low⁵⁹ and the Financial Times reported in 2021 that UK and European banks plan to make more use of new ways of working and reduce business trips after the pandemic.⁶⁰

This is the new reality for the aviation industry but that is a harsh message for those who trained to work in the industry and have been awaiting its return.

50 UK government press release, 2021

51 WYCA website

52 Leeds Climate Commission website

53 <https://www.theccc.org.uk/wp-content/uploads/2020/12/Sector-summary-Aviation.pdf>, p21

54 <https://hansard.parliament.uk/commons/2020-11-26/debates/44428DE9-A213-4CBB-9745-3FOF12F84ECB/ClimateChangeAssemblyUKThePathToNetZero>

55 <https://www.leedsclimate.org.uk/leeds-citizens-jury-recommendations-published>, recommendation 9

56 IATA website, 2020

57 <https://www.iata.org/en/pressroom/pr/2020-07-07-01/>

58 <https://www.theguardian.com/environment/2020/nov/10/people-drive-fly-climate-crisis-global-poll-green-recovery-covid-pandemic>

59 Fortune magazine, 'Business travel likely to stay depressed because executives prefer video meetings, spooking airlines', 2021

60 <https://www.ft.com/content/b50d7754-b257-4c5b-88b8-886fb19366b3>

Leeds City Region – as other areas of the country – was hit hard economically by the pandemic. In July 2021, 110,00 people in Leeds City Region were claiming unemployment benefits, of which a third were under the age of 30, with a further 60,000 on furlough. With the end of the furlough scheme, those working in aviation and the travel industry are in the front line of the economic crisis.

Whilst the LBA planning application claims overall jobs increases of 5230 by 2030 (not the 12000+ widely reported in the media), these are highly unlikely to be delivered. Only 1460 of these new jobs are directly employed by the airport, but delivery of these will be impacted by automation and overly optimistic passenger projections. Projections of potential jobs as a result of wider impacts miscalculate the impact of both tourism and carbon costs.

8 Conclusion

Given the magnitude of the climate crisis, the highlighting of this in the COP26 discussions in Glasgow, and the unique circumstances of the pandemic, this is not the time to restart the aviation industry's 'business as usual' approach. We need to rethink the long-term role of aviation in our society so that it operates within planetary limits. For the sake of everyone whose jobs are supported by LBA, for the sake of our local economy and for the sake of our climate and our future, we need a different strategy to create jobs. Our vision proposes over 16,000 long term jobs across the Leeds City Region in all sectors of the economy. Implementing that vision now will ensure a fair transition to a low carbon economy that supports jobs, services, communities and the planet.

We call upon local decision-makers, trades unions, residents, businesses and fellow campaigners to join our call for a just transition to a green economy.

Annexes



Annex One: Aviation in the climate crisis

Emissions footprint of aviation

The International Civil Aviation Organisation (ICAO) has forecast aviation emissions will grow by over 300% by 2050 without additional measures to control expansion and find alternative, non-fossil fuels.⁶¹ Increased flying also increases other non-CO2 pollutants such as nitrous oxide and water vapour contrails. CO2 accounts for only one third of aviation's climate heating effects, two thirds comes from these non-CO2 pollutants.⁶² In the UK, aviation emissions accounted for 7% of UK greenhouse gas emissions in 2018 (88% above 1990 levels).⁶³ This may not sound much but flying is one of the most difficult sectors of the economy to decarbonise because there are currently almost no alternative fuels to the fossil fuel, kerosene, which aircraft need to power them. The Climate Change Committee (expert advisers to the UK government) has recently warned: "*Aviation is likely to be the largest emitting sector in the UK by 2050, even with strong progress on technology and limiting demand.*"⁶⁴

The Climate Change Committee (CCC) has also said that: "*Aviation emissions could be reduced by around 20% from today to 2050 through improvements to fuel efficiency, some use of sustainable biofuels... and novel fuels (e.g. synthetic carbon-neutral kerosene, algal biofuels)...*" However, it has also concluded: "*Zero-carbon aviation is highly unlikely to be feasible by 2050.*"⁶⁵

The emissions footprint of aviation is not shared out equally amongst the UK population. Research has repeatedly revealed the dominance of frequent flyers. Figures published in a Department for Transport survey in 2018 revealed that the 10% most frequent flyers in England took more than half of all international flights. However, 48% of the population did not take a single flight abroad in that year.⁶⁶

In March 2014, a government survey of 1,000 randomly selected adults in Great Britain asked how many trips by plane they had taken in the last 12 months. 52% hadn't flown at all and 15% were 'frequent flyers' - people who had flown three or more times. Those frequent fliers made 71% of all UK flights in the year until March 2014. The larger National Travel Survey asked people in England how many times they flew abroad in the last year. In 2018, it found that 15% of people had flown three or more times.⁶⁷ Furthermore, these frequent flyers are significantly more likely to have higher incomes than the average UK resident, with the top fifth of earners currently flying five times more often than the poorest fifth.⁶⁸

61 <https://www.transportenvironment.org/discover/decarbonisation-aviation-why-eu-and-icao-action-needed/>

62 <https://www.sciencedirect.com/science/article/pii/S1352231020305689>

63 <https://www.theccc.org.uk/wp-content/uploads/2020/12/Sector-summary-Aviation.pdf>, p5

64 <https://www.theccc.org.uk/publication/letter-international-aviation-and-shipping/>, p1

65 <https://www.theccc.org.uk/publication/letter-international-aviation-and-shipping/>, p2

66 The Guardian, 2019

67 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/906847/nts-2019-factsheets.pdf

68 <https://neweconomics.org/2021/07/a-charge-on-frequent-flyers-would-make-post-pandemic-holidays-cheaper-for-uks-poorest-households>

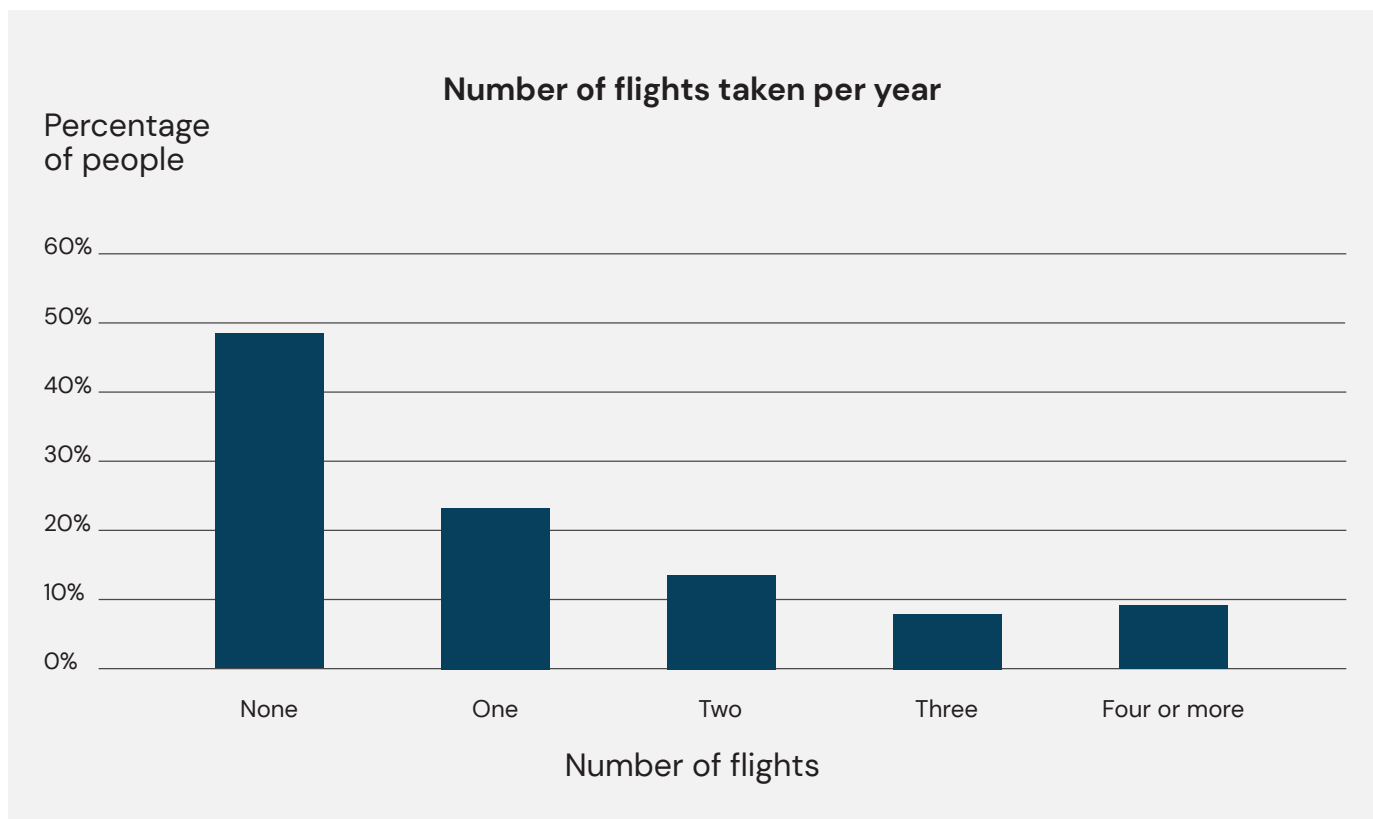


Figure 4: Number of flights taken per year (2019 National Travel Survey)

Offsetting is not an effective method of reducing emissions⁶⁹ and has the counterproductive effect of making people think their emissions don't actually damage the climate. Over-reliance on offsetting aviation emissions is likely to lead to a continuation of, or even an increase in choices that increase emissions.

Aviation taxation and trends in airport design

The aviation industry is uniquely privileged in the UK tax system. No VAT is applied to ticket transactions, there is no tax on fossil fuels used to fly planes (unlike petrol for cars) and the government is reducing domestic Air Passenger Duty. It has been estimated that these tax breaks amount to a taxpayer subsidy for aviation of around £7 billion per year.⁷⁰

This is public money that could be used to create jobs that tackle the climate crisis, not make it worse. It's worth remembering that most people on low incomes do not fly off on weekends abroad. They make fewer air journeys than anybody else, so they receive the least benefit from tax subsidies to the aviation industry. Despite this favourable treatment, an assessment by IATA (the aviation industry's global trade body) noted that "even before COVID-19 much of the industry was fragile" with heavy debt burdens.⁷¹

69 <https://www.transportenvironment.org/discover/85-offsets-failed-reduce-emissions-says-eu-study/>

70 <https://neweconomics.org/2020/06/crisis-support-to-aviation-and-the-right-to-retrain>

71 IATA: 'COVID-19: Outlook for the airline industry 2020-21', 2020

This suggests the need for an urgent review of the taxation system to incentivise the move to low carbon travel.

Jet Zero consultation

In the context of the above, the government has recently issued its Jet Zero consultation stating “*our ambition to decarbonise includes every sector of our economy... [aviation] is forecast to become the second highest residual emitter in 2050 as other sectors reduce their emissions. Despite aviation being one of the most challenging sectors to decarbonise, we are clear that it will play its part in ensuring the UK reaches net zero.*”⁷²

It is not yet known how the consultation on Jet Zero will influence the government’s position on the industry. The proposed national strategy does, however, appear to lack the actions to meet the ambition as it:

- proposes to allow unconstrained passenger and airport growth (and therefore emissions growth) at all UK airports
- rejects the advice of the UK Climate Change Committee to introduce demand management measures, including the prevention of any net growth of UK airport capacity
- proposes to allow aviation greenhouse gas (GHG) emissions to increase up to 2030 from 2019 levels, contradicting the IPCC’s advice that we must cut emissions by 45% by 2030 from 2010 levels
- places all of its longer term hopes on unproven, small scale, new technologies and alternative fuels, offering little or no evidence to suggest that these can be sufficiently scaled up within the necessary timescale

72 <https://www.gov.uk/government/consultations/achieving-net-zero-aviation-by-2050>

Annex Two: The impact of COVID on jobs

As with the rest of the country, Leeds City Region was hit hard by the impact of the pandemic. Over 110,000 people were claiming unemployment benefit in July 2021 with a disproportionate impact on younger people.

Local authority	Total	Total under 30	Under 30 as a % of total
Barnsley	8,110	2,815	35
Bradford	28,820	9,870	34
Calderdale	7,370	2,475	34
Craven	765	190	25
Harrogate	2,580	710	28
Kirklees	15,555	5,185	33
Leeds	30,790	10,365	34
Selby	1,680	490	29
Wakefield	10,985	3,675	33
York	3,645	1,190	33
Total	110,300	36,965	34

Table 7: Unemployed claimants (i.e. not employed and required to seek work to receive benefits), Leeds City Region by Local Authority, July 2021⁷³

This masked, however, the number on furlough, many of whom are at risk of redundancy as the furlough scheme comes to an end. This represents a further 60,000 people. There are also variations between Authorities with Bradford being particularly hard hit.

⁷³ Source: ONS NOMIS claimant count <https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?theme=72>

Local authority	Total	As % of LCR
Barnsley	4,350	7
Bradford	11,480	18
Calderdale	4,180	7
Craven	1,180	2
Harrogate	3,660	6
Kirklees	9,320	15
Leeds	15,950	26
Selby	1,880	3
Wakefield	6,030	10
York	3,860	6
Total	61,890	100
All under 30 as % of total	13,200	21

Table 8: Furloughed employees (receiving payments from the Coronavirus Job Retention Scheme), Leeds City Region by Local Authority, July 2021⁷⁴

The impact of COVID on air travel

Clearly the pandemic has had a massive impact on people’s work and leisure travel patterns, and it is still unclear exactly how these will evolve. It is, however, extremely unlikely to return to the situation pre-pandemic.

Consultants McKinsey looked at the global situation for aviation. They note that leisure travel – subject to any travel restrictions still in place – is likely to recover first. However, business travel is only anticipated to return to 80% pre-pandemic levels by 2024. It will, however, have a greater impact on all air travel as “*staggering debt levels will lead to ticket price increases and a larger role for government in the sector*”.⁷⁵ In other words, aviation will be dependent on even greater levels of subsidy than before, making it a precarious industry in which to seek a career.

74 Source: HMRC CJRS stats <https://www.gov.uk/government/statistics/coronavirus-job-retention-scheme-statistics-9-september-2021>

75 <https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/back-to-the-future-airline-sector-poised-for-change-post-covid-19>

Accountancy Daily noted that at the end of June 2021, “58% of passenger air transport and 49% of travel agency staff were still on furlough” – amounting to 1.9m people across the UK.⁷⁶ This has led to pleas to extend the furlough scheme (which ended in September 2021) for the sector.

In terms of the size of impact on jobs, there are 3655 jobs in the air transport sector in Leeds City region.⁷⁷ LBA’s planning application suggested that 2400 of these were directly supported by LBA activities, although the Yorkshire Post reported loss of over 100 from 400 directly employed jobs in July 2020.⁷⁸ Furlough figures above suggest that many more are still at risk.

76 <https://www.accountancydaily.co/half-aviation-and-tourism-staff-still-furlough>

77 Source: ONS NOMIS Business Register & Employment Survey: <https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?theme=27#>

78 <https://www.yorkshireeveningpost.co.uk/news/transport/leeds-bradford-airport-cut-quarter-its-workforce-more-100-jobs-set-go-2907400>

Annex Three: What does the Leeds City Region say about environment and the economy?

Leeds City Region Strategic Economic Plan (SEP) (2016 – 2036)⁷⁹

West Yorkshire Combined Authority (WYCA) released its SEP in 2016 stating, “*The focus of our Plan is not just growth for growth’s sake but good growth that combines innovation and productivity with more and better jobs, improved skills and career progression and a better environment so that the benefits can be felt by all*”.

The Plan is heavily focussed on the need to ‘unlock the North’s potential’ and become an above-average contributor to the UK economy, with the Leeds City Region being the largest economy outside London.

‘Good growth’ in the Plan has three interlocking features:

- High productivity, innovation and output
- Quality places and environment and connections
- Good jobs, incomes and less inequality

Specifically on the environment, the Plan has two objectives:

- Targeted investments and innovation to make the city region a leading centre for zero carbon energy
- Make climate change adaptation and high-quality green infrastructure integral to improving the city region economy and its spatial priority areas

The activities proposed include innovative energy solutions, ‘smart cities’ activity and new technology; flood resilience; home improvements to benefit disadvantaged communities and reduce fuel poverty; schemes that progress and balance environmental goals and add to quality of place; support transition to low carbon energy.

Regarding the Airport, the Plan recognises that surface access to the airport needs to improve, and the Airport is identified as one of sixteen employment growth areas. But there is no specific mention of any need to expand the airport under the infrastructure proposals.

Understandably, five years on, a number of factors have changed. For this, we consider Leeds City Council’s inclusive growth strategy and the more recent Economic Recovery Framework.

Leeds inclusive growth strategy (2018 – 2023)⁸⁰

The inclusive growth strategy is an alternative to the ‘trickle down’ model of economic prosperity. It is based on the idea that social inclusion in the benefits of higher productivity demands interventions across a range of areas, including education, housing, transport infrastructure, growing the city centre and regeneration of neighbourhoods. “*It will mean developing and regenerating places,*

79 <https://www.lepnetwork.net/media/1119/leeds-city-region-sep.pdf>

80 <http://www.leedsgrowthstrategy.co.uk/wp-content/uploads/2018/06/Leeds-Inclusive-Growth-Strategy-FINAL.pdf>

supporting neighbourhoods, communities and centres to respond to economic change, growing the city centre as an economic powerhouse not just for Leeds but also for the North, and growing major economic hubs to the north, east, south and west of Leeds.”

One of these economic hubs is Leeds Bradford Airport. The development of Parkway Station is a planned infrastructure development to support this hub. Within the Strategy are 12 big ideas, with the Airport featuring in number 7:

“Building a federal economy - creating jobs closer to communities: subject to planning approval, there are proposals for a new 36.2ha commercial hub at the airport creating 5,500 new jobs at a new Airport Village, Air Innovation Park and Air Freight Park.”* (*We discuss elsewhere the lack of evidence for these jobs)

The strategy also contains some references to commitments to carbon reductions, particularly in relation to energy efficiency projects. The conversion to hydrogen is described as a transformational project with significant opportunities for job creation.

An update to the Strategy in 2019 noted about climate change that, *“although the threats are very real, a shift to a zero carbon economy provides real opportunities for new growing sectors and the chance to improve quality of life. It is estimated that Leeds could save £277m a year if it exploited cost-effective opportunities for energy efficiency and low carbon development.”*

Leeds economic recovery framework: October 2020⁸¹

This is a post COVID document in which it is acknowledged that everything needs to be reassessed whilst remaining fully committed to the policy of inclusive growth. This report contains much more detail in relation to green jobs:

“Recovery approach includes: Build Resilience. Maintain a long-term view of our aspirations to deliver inclusive growth, address the climate emergency and be the best city for health and wellbeing. Ensure that our decisions lead us towards these goals.”

The report notes that the UK labour market has lost almost 700,000 jobs since the start of the coronavirus outbreak - the biggest increase in redundancies since the financial crash. At the time of writing that report, 115,000 workers were furloughed in the city, but this was expected to eventually lead to large scale redundancies. In addition, there had been a 92% increase in claimants of universal credit.

The report was, however, upbeat about the opportunities in emerging Green sectors. The LGA (Local Government Association) shows Leeds will become a hot spot for new green jobs, generating the highest estimated number of jobs in the low-carbon and renewable energy sector of all the English Core Cities, with the city expected to see almost 34,000 new jobs by 2050.

81 <http://www.leedsgrowthstrategy.co.uk/wp-content/uploads/2020/10/Leeds-Economic-Recovery-Framework-FINAL-1.pdf>

Interestingly, LBA is only mentioned in this report in relation to transport infrastructure, with the proposed investment for the rail station serving Leeds Bradford Airport. The report contains a Building Resilience section. Here the report states that the recovery plan needs to: “*utilise the changes that have been driven by Covid-19*” and “*recover*” to a different, better, more equitable, and low carbon economy.” There is also a specific section on Green Opportunities:

“...even in tough times we need to be ambitious, creating jobs whilst promoting health and wealth. One of our main priorities is to become a carbon neutral city by 2030. The Investing in a Just Transition Initiative highlighted that Yorkshire accounts for 6.4% of UK GDP but 10% of carbon emissions, it forecast that 22.2% of jobs in Yorkshire could be affected by a transition to a greener economy. This does not mean these jobs will be lost but highlights new skills and training will be required.”

Specific schemes mentioned in relation to the green economy include:

- Retrofitting of housing in the Holbeck area
- Tree planting
- Electric vehicle charging and electric bike trials

There is a further reference to green jobs in a section on Devolution which breaks down the £1.4bn West Yorkshire Economic Recovery Plan. The Transition to Net Zero Carbon Resilient Economy (£192m) supports West Yorkshire Combined Authority’s net zero 2038 target, with unique industry strengths in low carbon transport, clean agri-tech, construction and circular economy, delivering a pipeline of critical green and blue infrastructure, 70,000 jobs and skills and training.

Note that whilst Leeds City Council has a 2030 target for net zero, this is 2038 for the Leeds City Region. These targets do not, however, include airport emissions.

Yorkshire and Humber Climate Commission

The Commission was established in March 2021 and has commissioners drawn from senior leadership in public and private sectors, academia and third sector bodies. Its agreed target is to substantially decarbonise the region by 2030 and to reach net zero carbon by 2038. To date it has held its inaugural meeting and is holding consultation events around its climate action plan, which were announced in November 2021 at a summit in Leeds.

Aviation is not specifically mentioned within any of the Commission’s work to date but it does note in the minutes of its first meeting that “*too many climate organisations have declared a climate emergency without having an action plan for effective carbon reduction.*”

The Commission’s data shows that in 2000, Yorkshire and Humber emitted around 50 million metric tons of CO₂e. Currently this has reduced to around 30 million tons, although aviation and shipping add a further 10% to both figures.

The climate emergency targets declared by the region’s Local Authorities aspire to be close to zero within eight years, but the plans in place are wholly inadequate to meet this.

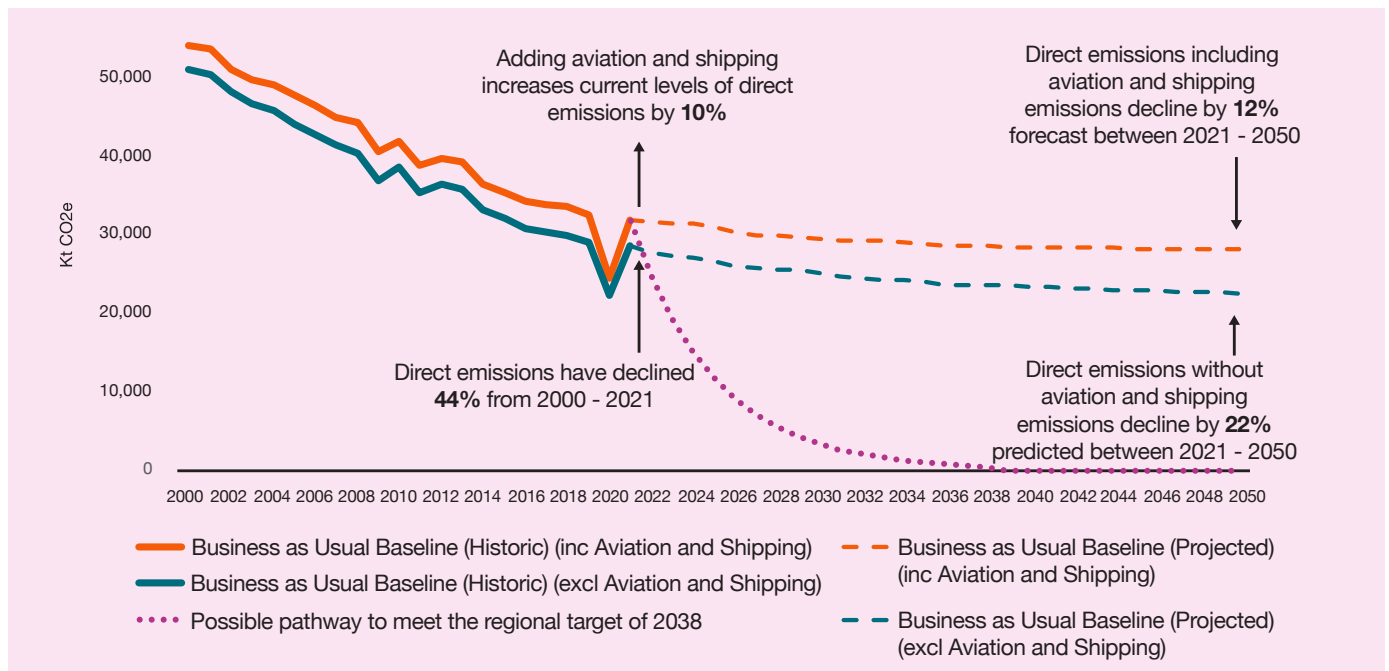


Figure 5: Yorkshire and Humber greenhouse gas baseline and target ⁸²

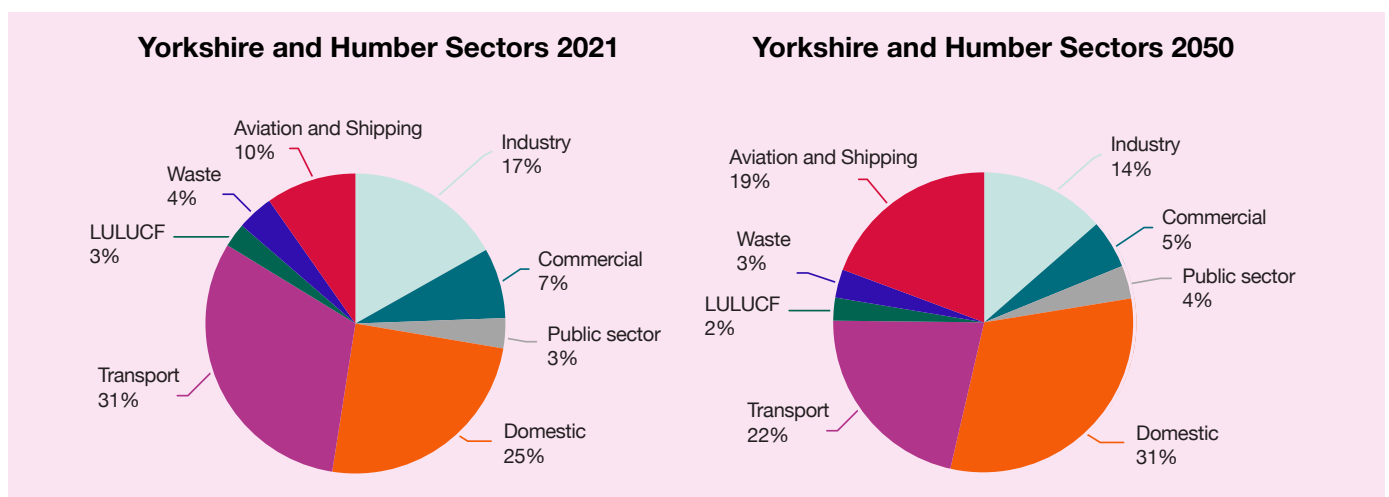


Figure 6: Current and projected (2050) sectoral breakdown of emissions for Yorkshire and Humber ⁸²

Leeds City Council (LCC) statement on airport expansion

LCC has stated that it believes there is a need for national government to develop a national policy on airport expansion proposals across the UK, and has accordingly made a number of ‘asks’ of central government, which include:

- set an ambitious national aviation strategy that integrates aviation into the national carbon roadmap
- create a level playing field for all national and regional airports

⁸² <http://yorksandhumberclimate.org.uk/sites/default/files/Climate%20Action%20Plan.pdf>

These 'asks' were rejected. In April 2021, the government did include all UK aviation emissions in UK carbon budgets. However, as noted in Section 2, Jet Zero, the government's proposed strategy for making flying carbon net zero by 2050, is far from 'ambitious' on the goal of reducing aviation greenhouse gas emissions. This puts the onus back to Leeds City Council and Leeds City Region to set out how it can meet its net zero aspirations whilst offering concrete actions to support those aviation workers at risk.

Annex Four: Climate job potential of a ten-year Green New Deal for the Leeds City Region

	Total transition	Long term transition
Reuse and Recycle (net)	2,222	4,445
<i>Municipial solid waste</i>	746	1,493
<i>Construction, Commercial and Industrial waste</i>	1,476	2,952
Transport	3,253	6,505
<i>Local Bus Drivers and bus maintenance</i>	3,169	6,335
<i>Railway and long-distance bus operation and maintenance</i>	2,312	4,626
<i>Vehicle maintenance (net reduction in non-electric vehicles)</i>	-2,228	-4,456
Building retrofit	21,381	2,912
<i>Energy efficiency improvements</i>	9,146	2,912
<i>Solar thermal, PV and heat pumps</i>	12,235	
Renewable energy	1,765	163
<i>Loss of fossil fuel generation</i>	-112	-225
<i>Onshore wind</i>	1,196	345
<i>PV, hydro and electric grid update</i>	681	43
Training and support	1,821	1,574
Total	30,442	15,599

Table 9: Potential green jobs by sector

Leeds city region jobs breakdown		
Council area	Transition	Long term
Leeds	7,931	4,359
Bradford	4,986	2,835
Calderdale	2,986	1,525
Kirklees	3,504	1,890
Wakefield	3,530	1,882
Barnsley	2,287	1,081
York	2,002	956
Harrogate	1,457	460
Selby	721	214
Craven	1,042	396
Total	30,446	15,598

Table 10: Potential green jobs by Local Authority

	Barnsley	
	Transition	Long-term
Reuse and Recycle (net)	245	489
<i>Municipial solid waste</i>	56	112
<i>Construction, Commercial and Industrial waste</i>	189	377
Transport	126	252
<i>Local Bus Drivers and bus maintenance</i>	136	273
<i>Railway and long-distance bus operation and maintenance</i>	97	193
<i>Vehicle maintenance (net reduction in non-electric vehicles)</i>	-107	-214
Building retrofit	1,658	226
<i>Energy efficiency improvements</i>	709	226
<i>Solar thermal, PV and heat pumps</i>	949	
Renewable energy	126	18
<i>Loss of fossil fuel generation</i>	0	0
<i>Onshore wind</i>	59	17
<i>PV, hydro and electric grid update</i>	67	1
Training and support	132	96
Total	2,287	1,081

Table 11: Potential green jobs in Barnsley

	Bradford	
	Transition	Long-term
Reuse and Recycle (net)	384	768
<i>Municipal solid waste</i>	134	268
<i>Construction, Commercial and Industrial waste</i>	250	500
Transport	644	1,285
<i>Local Bus Drivers and bus maintenance</i>	597	1,193
<i>Railway and long-distance bus operation and maintenance</i>	444	888
<i>Vehicle maintenance (net reduction in non-electric vehicles)</i>	-397	-796
Building retrofit	3,548	483
<i>Energy efficiency improvements</i>	1,518	483
<i>Solar thermal, PV and heat pumps</i>	2,030	
Renewable energy	111	17
<i>Loss of fossil fuel generation</i>	0	0
<i>Onshore wind</i>	52	15
<i>PV, hydro and electric grid update</i>	59	2
Training and support	299	282
Total	4,986	2,835

Table 12: Potential green jobs in Bradford

	Calderdale	
	Transition	Long-term
Reuse and Recycle (net)	152	304
<i>Municipal solid waste</i>	53	106
<i>Construction, Commercial and Industrial waste</i>	99	198
Transport	377	752
<i>Local Bus Drivers and bus maintenance</i>	348	695
<i>Railway and long-distance bus operation and maintenance</i>	259	518
<i>Vehicle maintenance (net reduction in non-electric vehicles)</i>	-230	-461
Building retrofit	2,207	301
<i>Energy efficiency improvements</i>	943	301
<i>Solar thermal, PV and heat pumps</i>	1,264	
Renewable energy	70	11
<i>Loss of fossil fuel generation</i>	-1	-2
<i>Onshore wind</i>	40	12
<i>PV, hydro and electric grid update</i>	31	1
Training and support	180	157
Total	2,986	1,525

Table 13: Potential green jobs in Calderdale

	Craven	
	Transition	Long-term
Reuse and Recycle (net)	62	124
<i>Municipal solid waste</i>	22	43
<i>Construction, Commercial and Industrial waste</i>	40	81
Transport	61	124
<i>Local Bus Drivers and bus maintenance</i>	84	168
<i>Railway and long-distance bus operation and maintenance</i>	54	109
<i>Vehicle maintenance (net reduction in non-electric vehicles)</i>	-77	-153
Building retrofit	691	94
<i>Energy efficiency improvements</i>	296	94
<i>Solar thermal, PV and heat pumps</i>	395	
Renewable energy	164	8
<i>Loss of fossil fuel generation</i>	-20	-39
<i>Onshore wind</i>	145	42
<i>PV, hydro and electric grid update</i>	39	5
Training and support	64	46
Total	1,042	396

Table 14: Potential green jobs in Craven

	Harrogate	
	Transition	Long-term
Reuse and Recycle (net)	69	138
<i>Municipal solid waste</i>	24	48
<i>Construction, Commercial and Industrial waste</i>	45	90
Transport	68	138
<i>Local Bus Drivers and bus maintenance</i>	93	187
<i>Railway and long-distance bus operation and maintenance</i>	60	121
<i>Vehicle maintenance (net reduction in non-electric vehicles)</i>	-85	-170
Building retrofit	768	104
<i>Energy efficiency improvements</i>	329	104
<i>Solar thermal, PV and heat pumps</i>	439	
Renewable energy	463	22
<i>Loss of fossil fuel generation</i>	-55	-111
<i>Onshore wind</i>	409	118
<i>PV, hydro and electric grid update</i>	109	15
Training and support	89	58
Total	1,457	460

Table 15: Potential green jobs in Harrogate

	Kirklees	
	Transition	Long-term
Reuse and Recycle (net)	248	496
<i>Municipal solid waste</i>	86	173
<i>Construction, Commercial and Industrial waste</i>	162	323
Transport	422	846
<i>Local Bus Drivers and bus maintenance</i>	390	781
<i>Railway and long-distance bus operation and maintenance</i>	291	582
<i>Vehicle maintenance (net reduction in non-electric vehicles)</i>	-259	-517
Building retrofit	2,478	337
<i>Energy efficiency improvements</i>	1,059	337
<i>Solar thermal, PV and heat pumps</i>	1,419	
Renewable energy	147	23
<i>Loss of fossil fuel generation</i>	-2	-4
<i>Onshore wind</i>	85	24
<i>PV, hydro and electric grid update</i>	64	3
Training and support	209	188
Total	3,504	1,890

Table 16: Potential green jobs in Kirklees

	Leeds	
	Transition	Long-term
Reuse and Recycle (net)	602	1,203
<i>Municipal solid waste</i>	210	420
<i>Construction, Commercial and Industrial waste</i>	392	783
Transport	963	1,925
<i>Local Bus Drivers and bus maintenance</i>	892	1,781
<i>Railway and long-distance bus operation and maintenance</i>	664	1,330
<i>Vehicle maintenance (net reduction in non-electric vehicles)</i>	-593	-1,186
Building retrofit	5,683	775
<i>Energy efficiency improvements</i>	2,431	775
<i>Solar thermal, PV and heat pumps</i>	3,252	
Renewable energy	210	25
<i>Loss of fossil fuel generation</i>	0	0
<i>Onshore wind</i>	76	22
<i>PV, hydro and electric grid update</i>	134	3
Training and support	473	431
Total	7,931	4,359

Table 17: Potential green jobs in Leeds

	Selby	
	Transition	Long-term
Reuse and Recycle (net)	32	63
<i>Municipal solid waste</i>	11	22
<i>Construction, Commercial and Industrial waste</i>	21	41
Transport	32	63
<i>Local Bus Drivers and bus maintenance</i>	43	86
<i>Railway and long-distance bus operation and maintenance</i>	28	55
<i>Vehicle maintenance (net reduction in non-electric vehicles)</i>	-39	-78
Building retrofit	353	48
<i>Energy efficiency improvements</i>	151	48
<i>Solar thermal, PV and heat pumps</i>	202	
Renewable energy	260	12
<i>Loss of fossil fuel generation</i>	-31	-62
<i>Onshore wind</i>	230	66
<i>PV, hydro and electric grid update</i>	61	8
Training and support	44	28
Total	721	214

Table 18: Potential green jobs in Selby

	Wakefield	
	Transition	Long-term
Reuse and Recycle (net)	269	536
<i>Municipal solid waste</i>	94	187
<i>Construction, Commercial and Industrial waste</i>	175	349
Transport	403	808
<i>Local Bus Drivers and bus maintenance</i>	374	748
<i>Railway and long-distance bus operation and maintenance</i>	278	557
<i>Vehicle maintenance (net reduction in non-electric vehicles)</i>	-249	-497
Building retrofit	2,514	342
<i>Energy efficiency improvements</i>	1,076	342
<i>Solar thermal, PV and heat pumps</i>	1,438	
Renewable energy	134	11
<i>Loss of fossil fuel generation</i>	-3	-6
<i>Onshore wind</i>	53	15
<i>PV, hydro and electric grid update</i>	84	2
Training and support	210	185
Total	3,530	1,882

Table 19: Potential green jobs in Wakefield

	York	
	Transition	Long-term
Reuse and Recycle (net)	162	323
<i>Municipal solid waste</i>	57	113
<i>Construction, Commercial and Industrial waste</i>	105	210
Transport	156	312
<i>Local Bus Drivers and bus maintenance</i>	211	423
<i>Railway and long-distance bus operation and maintenance</i>	137	273
<i>Vehicle maintenance (net reduction in non-electric vehicles)</i>	-192	-384
Building retrofit	1,482	202
<i>Energy efficiency improvements</i>	634	202
<i>Solar thermal, PV and heat pumps</i>	848	
Renewable energy	80	16
<i>Loss of fossil fuel generation</i>	0	0
<i>Onshore wind</i>	47	14
<i>PV, hydro and electric grid update</i>	33	2
Training and support	122	103
Total	2,002	956

Table 20: Potential green jobs in York

Glossary of terms used

Acronym	Stands for	Means
BEIS	Department for Business, Energy & Industrial Strategy	Government department concerned with promoting business and innovation, and addressing the climate crisis
CCC	Climate Change Committee	An independent, statutory body established under the Climate Change Act 2008. Its purpose is to advise the UK and devolved governments on emissions targets and to report to Parliament on progress made in reducing greenhouse gas emissions and preparing for and adapting to the impacts of climate change
CO ₂	Carbon dioxide	Key greenhouse gas released through human activities such as deforestation and burning fossil fuels, as well as natural processes such as respiration and volcanic eruptions. It acts as a 'thermostat' for planetary temperature
CO ₂ e	Carbon dioxide equivalent	A way of measuring the warming impact of greenhouse gases, expressed as metric tons of CO ₂
CPP	City Plans Panel	A committee of Leeds City Council authorised to discharge or delegate all Council (non-executive) functions relating to major or significant planning applications.
GALBA	Group for Action on Leeds Bradford Airport	A voluntary group established to oppose airport expansion
GEF	Green European Foundation	A European-level political foundation, which aims to contribute to a lively European sphere of debate on green issues
GDP	Gross Domestic Product	A standard economic measure of the value added created through the production of goods and services in a country during a certain period. It measures the income earned from that production, or the total amount spent on final goods and services (less imports)

GHG	Greenhouse gas	A gas that absorbs and emits radiant energy within the thermal infrared range, causing the greenhouse effect – i.e. heat reflected back that warms the planet. The primary greenhouse gases in Earth's atmosphere are water vapour, carbon dioxide, methane and nitrous oxide.
HGV	Heavy Goods Vehicle	Also referred to as a LGV or large goods vehicle
IATA	International Air Transport Association	Sets aviation global standards for airline safety, security, efficiency and sustainability
ICAO	International Civil Aviation Organisation	Creates regulations for aviation safety, security, efficiency and regularity and environmental protection
IPCC	Intergovernmental Panel on Climate Change	United Nations body for assessing the science related to climate change.
LBA	Leeds Bradford Airport	
LCC	Leeds City Council	
LCR	Leeds City Region	An administrative area including West Yorkshire, York and parts of North Yorkshire and Selby to the South
LGA	Local Government Association	National membership body for local authorities that works on behalf of our member councils to support, promote and improve local government
NEF	New Economics Foundation	A group that works with other organisations to create a new economy that works for people and within environmental limits
SEP	Strategic Economic Plan	Regional document that aims to create growth, jobs and benefits for citizens in its area

Table cont. overleaf

Solar PV	Solar photovoltaics	Rooftop solar panels on homes and businesses, that produce electricity from solar energy directly. Solar thermal technologies use the sun's energy to generate heat, and electricity
UCL	University College London	
WYCA	West Yorkshire Combined Authority	Administrative body covering the five council areas of West Yorkshire that aims to create a strong, successful economy and a modern accessible transport network

