

# A MANIFESTO TO TACKLE NOISE AND PROVIDE SOLUTIONS

## **UK NOISE ASSOCIATION**

The UK Noise Association, founded in 2000, is a non-profit-making campaigning organisation. At present it is being run by a group of people with proven expertise in noise and many years of experience campaigning on the issue. The Noise Association is our charitable wing that carries out research and produces publications from time to time. Both bring together a coalition of key organisations lobbying on different aspects of noise. We highlight noise problems but our focus is on solutions. We believe a quieter world is possible.



### PAPER 1:

### **INTRODUCTION**

Artificial sources of noise are near-ubiquitous in the modern world

## The House of Lords Science and Technology Committee's report into noise and light pollution, published July 2023 (1).

The Committee found that 'noise and light pollution can impact human health' and that 'noise pollution contributes to annoyance and can increase risks for stroke and heart disease'. It added, 'Scientific evidence indicating that these pollutants have an impact on human health has been growing. The World Health Organization published guidelines in 2018 for noise pollution in the European concluded that the thresholds for negative health impacts of noise were lower than had previously been thought (2). In Britain 40% of the population is exposed to dangerous levels'.

Despite this our report finds that environmental noise and light remain neglected pollutants, poorly understood and poorly regulated, despite their potential negative health impacts.

In a series of short papers we lay out what can be done to tackle noise. Our focus is on solutions. Generally, noise is a problem with solutions. We set out measures governments and local authorities can implement.

### There are 10 short papers covering

- The Need for a Noise Strategy
- Noise and Energy
- Roads and Traffic
- Aircraft Noise
- Rail Noise
- Neighbour Noise
- Community Noise
- Background Music
- Drones and Air Taxis

### Plus a final paper with our overall recommendations

(The papers are also available individually).

Our remit is noise. So we haven't touched on the wider implications of our solutions which might rule out or modify some of the measures we suggest. For example, we advocate electric cars because they cut noise but their lithium-ion batteries require cobalt, mined in the Congo by 40,000 child labourers risking their lives in appalling conditions. Can our peace and quiet justify that?

(1). https://publications.parliament.uk/pa/ld5803/ldselect/ldsctech/232/23202.htm

<sup>(2).</sup> https://www.who.int/europe/publications/i/item/9789289053563



### PAPER 2:

### THE NEED FOR A NOISE STRATEGY

### **The Current Position**

The Noise Policy Statement for England (NPSE) published in March 2010 sets out the Government's long-term vision for noise policy. It states the Government wishes to 'promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.' This is supported by three aims: to avoid significant adverse impacts on health and quality of life; to mitigate and minimise adverse impacts on health and quality of life; and where possible, contribute to the improvement of health and quality of life. (Note: neither Scotland nor, it appears, Northern Ireland has a noise strategy. This is a situation which needs to be rectified).

### There is a need to build on the current strategy.

### 1. An advisory panel to be set up to provide independent advice to the Government

This is recommended by the House of Lords Science and Technology Committee's report into noise and light pollution (1). Our view is that the panel should be made up of a diverse range of people with knowledge and/or experience of noise. It should be a high-profile panel along the lines of the Committee on Climate Change whose advice is promoted to the press and the public. This would raise the profile of noise.

### 2. An overall noise reduction target to be introduced

This was another recommendation of the House of Lords Committee. The target would be based on reducing exposure to noise. It would provide a clear objective to be met and stimulate action to achieve it. There may also be a case for setting sub-targets for the different sources of noise: neighbour, aircraft, traffic noise etc.

### 3. Local authorities to be adequately funded and rigorously monitored

Local authorities have a big role to play in reducing noise. Many currently struggle with funding. Some performed badly even when they had funds. The Lords Committee recommends the Department for Levelling Up, Housing and Communities should set out what resources local authorities should have to tackle noise effectively. That makes sense. The Committee also felt DEFRA (Government department responsible for noise) 'does not appear to be receiving the information it needs to conclude whether its policies are being effectively implemented by local authorities.' In our view, annual local authority performance tables should be published.

### 4. Noise to be fully integrated into all policies and plans from the start

The draft Welsh Noise Plan (2) says 'It is no longer acceptable to regard noise as a technical matter to be mitigated at the end of the process. Rather, it is integral to the design, functioning, health, amenity and well-being of places'.

### 5. Making 'the average person' the benchmark for nuisance to be re-examined

It has been used in the assessment of complaints of noise nuisance for decades but in its Noise Plan the Welsh Government recognises the 'average person' does not exist in reality and calls for further research and debate. We would support that.

(1). <u>https://publications.parliament.uk/pa/ld5803/ldselect/ldsctech/232/23202.htm</u>

(2). https://www.gov.wales/sites/default/files/publications/2019-04/noise-and-soundscape-action-plan.pdf

### PAPER 3:

### **NOISE AND ENERGY**

### Decarbonisation

There is a real danger noise will lose out in the rush to tackle climate change. (This is most obvious in Scotland where a number of their policies, not just on energy, downgrade noise). Both the House of Lords Science and Technology Committee, which conducted a major inquiry into noise in 2023 (1), and the Welsh Government's draft Noise Plan (2) are clear this must not be allowed to happen. The Lords Committee said, 'The move to net zero requires widespread infrastructure changes, for example the possible widespread use of heat pumps and electric cars, which may have implications for noise pollution.' It recommended 'the Government should take steps to ensure that the implications of the technological shifts required for net zero and adapting to climate change for noise pollution are understood and addressed early on'. The Welsh Noise Plan is equally clear: 'The sounds generated by air conditioning units, wind turbines and heat pumps must be factored into decision-making as we seek to adapt to and mitigate man-made climate-change.'

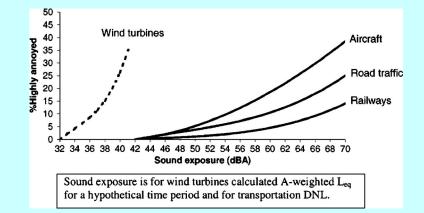
### The UK Noise Association is calling for:

### 1. A Noise Audit of all Energy Sources

The UK Government has a target of reaching net zero by 2050. Many have doubts whether this is practical, achievable or even desirable. But the current reality is that it is in place and is driving energy policy. To ensure that this policy takes account of noise, a noise audit should be mandatory for all changes in energy types, whether it be at a national, local or household level.

### 2. Restrictions on Wind Turbines

The World Health Organisation in its latest report (3) has shown clearly wind turbines cause noise problems.



### People start to get annoyed at lower levels by wind turbine noise than by any other noise.

While not conventionally 'loud', noise from wind turbines can be particularly disturbing due to the high-level of low-frequency contained in the noise. This, together with the flickering of the blades, can be destabilizing. It is essential that the experience of the 2000s is avoided when people were unaware of the noise turbines would cause and too many were built too close to their homes.

### Where turbines are built onshore, we recommend:

### • Using accurate noise guidelines

The current method of measuring wind turbine noise is called ETSU-R-97 (4) but it has been heavily criticized (5). Our view is that it should be revised or replaced.

• No turbines within at least one mile of residential properties. This is the distance recommended by the French Academy of Medicine. The terrain of course will influence how far the noise carries so, if there is nothing to block the noise, the distance should be greater.

• **Close down turbines which cause disturbance.** It is not acceptable to expect people to put up with destabilizing and disturbing noise for decades.

**Off-shore turbines** have less impact on people but can have a huge impact on mammals. Many mammals, such as whales, rely on sound for their survival. If the low-frequency coming from the turbines is on the same wavelength as that used by whales they will become disorientated.

### 3. Solar, but only with tough noise mitigation measures

Solar is not silent. Solar farms make a hum. The noise comes from the invertors and the transformer. A key study (6) found that the average noise at 10ft from the inverter face ranged from 48 decibels to 72 decibels but at 150ft typically the noise didn't exceed background levels. Generally, there was a reduction of 6 decibels with a doubling of distance. But the tone of the hum is problematic. Our recommendation is that solar farms are not installed close to residential properties and that, wherever they are installed, a noise barrier is put in around the noise-generating machinery.

### 4. Expansion of Nuclear

The UK Government has committed £20bn to fund the development of a network of small nuclear power stations (SMRs) with the aim of nuclear plants (small and large) providing 25% of UK energy by 2050. Nuclear is the quietest energy source. Leading American acoustician Robert Rand has said nuclear is 'a whole new magnitude' quieter and more productive than other energy sources. The noise from the cooling towers and pumps can be controlled. Only a water sound need remain which is not unpleasant. We recognise that the capital cost of nuclear can be high (though prices fall when designs are standardized) and that governments feel there may be public or pressure group opposition but nuclear's advantages in terms of noise, density and land-take make the initial capital costs and facing down the opposition worthwhile.

### 5. A Moratorium on Heat Pumps

The Institute of Acoustics has said 'Air Source Heat Pumps (ASHP) and Ground Source Heat Pumps (GDHP) generate noise and can potentially cause significant adverse effects to people living nearby' (7). It is particularly the case for those in shared accommodation, flats and terraced housing. If improved technology comes on-stream, the problem may be eased but any rushed move towards heat pumps will be problematic. It could replicate the problems caused by onshore turbines 15 or so years ago.

(1). https://publications.parliament.uk/pa/ld5803/ldselect/ldsctech/232/23202.htm

- (2). <u>https://www.gov.wales/sites/default/files/publications/2019-04/noise-and-soundscape-action-plan.pdf</u>
- (3). https://www.euro.who.int/\_\_data/assets/pdf\_file/0008/383921/noise-guidelines-eng.pdf

(4).<u>https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/49869/ETSU\_F\_ull\_copy\_\_Searchable\_.pdf</u>

- (5). <u>https://www.dickbowdler.co.uk/content/publications/ETSU-R-97\_-\_The\_Alternative\_-\_Incl\_figures.pdf</u>
- (6). <u>https://files.masscec.com/research/StudyAcousticEMFLevelsSolarPhotovoltaicProjects.pdf</u>
- (7). https://www.ioa.org.uk/news/heat-pumps-guidance-

noise#:~:text=Air%20Source%20Heat%20Pumps%20(ASHP,effects%20to%20people%20living%20nearby



### PAPER 4:

### **ROADS AND TRAFFIC**

8% of people in the UK extremely disturbed by traffic noise; 55% bothered to some extent (1).

But with the right measures in place, annoyance caused by traffic noise could be cut by 70% (2):

**1.** Lower speeds – 20mph to be the norm in built-up areas; reduced limits on 'A' roads and motorways Cutting the urban speed limit from 30mph to 20mph could reduce traffic noise by more than 50% (3). 20mph limits are now commonplace in built-up areas across the UK, including all built-up up roads in Wales. Cutting the motorway speed limit from 70mph to 60 mph could cut noise by more than 25% (3).

### 2. Quieter Road Surfaces

The use of quieter road surfaces could halve the noise from traffic. Quieter road surfaces like porous asphalt cost more than traditional road surfaces but are 3-10 times more cost-effective in reducing noise than mitigation measures such as home insulation or the construction of noise barriers (4).

### **3. Noise Barriers**

These can be expensive but are essential at noise hot spots.

### 4. Noise Cameras

Make nationwide the current the experiment where noise cameras can identify and track the vehicle. Introduce significant fines for offenders. Outlaw 'boom' cars and souped-up motorcycles, again with significant fines for offenders.

### **5. Electric Vehicles**

Electric vehicles will cut noise. There are caveats, though. First, tyre noise will still be present, meaning electric vehicles will only cut car noise up to speeds of about 35mph (and lorries below about 40mph); above that tyre noise dominates. Second, it is uncertain how much noise will be added to electric vehicles – and the tone of it - so people can hear them coming. But, even with these caveats, electric vehicles should cut noise in built-up areas quite noticeably.

### 6. Traffic Reduction

Traffic volumes affect noise. 200 vehicles passing in one hour sound half as loud as 2000. So volumes need to fall fairly significantly to have a noticeable effect. But a cut in traffic even by a small amount can improve noise levels by reducing the overall number of noise events. However, speed reduction is still crucial. Traffic noise will not fall automatically with a drop in vehicles numbers if it simply allows the remaining traffic to speed up.

### 7. Rule out Low Traffic Neighbourhoods

Low traffic Neighbourhoods can cut noise and traffic levels within the LTN but usually by increasing them on the surrounding roads which can be busy main roads that are often the noisiest. The focus should be on cutting noise on those roads; not the already quieter roads.

<sup>(1). &</sup>lt;u>file:///C:/Users/Dell/Downloads/12378\_SummaryReportV1.0.pdf</u>

<sup>(2).</sup> den Boer and Schroten, 2007

<sup>(3).</sup> Speed and Road Traffic Noise, Paige Mitchell, UK Noise Association, 2009

<sup>(4).</sup> The Danish Road Noise Strategy, Danish Environmental Protection Agency, 2003



### PAPER 5:

### **AIRCRAFT NOISE**

## Over 2.5 million people in the UK are extremely disturbed by aircraft noise, with 31% of the population bothered to some extent (1).

### When aircraft noise disturbs, it can really disturb

The World Health Organisation has found people start to get annoyed by aircraft noise at lower levels than either road or rail noise. This is partly down to the high-level of low-frequency present in aircraft noise. <u>https://www.euro.who.int/ data/assets/pdf file/0008/383921/noise-guidelines-eng.pdf</u>. Of course not everybody is disturbed by noise from planes flying over them. The statistics show that, even at high noise volumes, a lot of people are not worried but, nevertheless, the numbers disturbed remain high. If you are driven to despair by the noise, you can become very angry with the airport.



### Not 'anti-aviation' but 'anti-noise'

Aircraft are the work-horses of the globalised economy which has over the last few decades facilitated the trade which has lifted millions of people out of poverty. Warren East, the chief executive of Rolls Royce, put it like this:

"For thousands of years, the exchange of culture, ideas, goods and services has been the powerhouse of human progress. Aviation has accelerated that exchange across continents, making a huge contribution to humanity and the global economy. International trade is responsible for much of the development and prosperity of the modern world". Daily Telegraph (4/2/20)

He is correct. The 'degrowth' philosophy that some aviation campaigners put forward will bring a halt to the growing prosperity across the globe. Aviation – and the growth of aviation – has a key role to play in enabling that prosperity. This is not ruling out the fact it would be better if a lot of shorter journeys could be made by rail or to argue aviation shouldn't pay more tax. It should. It is under-taxed. It pays no tax on airline fuel and there is no VAT on tickets. But we mustn't kill off aviation. The focus should be on dealing with its downsides.

#### So, how to we deal with aircraft noise?

### 1. Commission research and development into quieter aircraft

Aircraft are a lot less noisy than they were 40 years ago. But in the coming years an annual reduction of only 0.1% is expected in noise from aircraft coming on-stream. The technology is not on the horizon for planes to become significantly quieter anytime soon. Meaningful resources need to be put into research and development of quieter planes by both the industry and governments.

### 2. Build new airports well away from centres of population

It is interesting there are few noise complaints about the main airports in the Scandinavian countries. They are located well outside the towns and cities. It is not always possible to relocate existing airports but there are lessons here for the emerging economies as they build new airports.

### 3. Encourage quieter alternatives to air travel where feasible

Aviation does long-distance journeys well but, if rail became more viable for shorter journeys, it opens up the possibility of managing or even reducing flight numbers over many communities (which is what they want above all else).

### 4. Share the noise around

Except for areas under the final approach to a runway, it is possible to use the new satellite-based technology to create rotating flight paths to give residents a break from the noise each day. In our experience, communities are much less interested in how many runways an airport has than in how many planes fly over their homes. It is the volume of aircraft passing overhead rather than the noise of each plane that is the biggest cause of disturbance.

### 5. Impose a numbers cap or a noise cap

The aviation industry favours a noise cap because it can incentivise airlines to use less noisy planes. Communities like a cap on the number of flights because it gives them more certainty. If a cap (on noise or numbers) is imposed, it would be most effective as a cap over particular communities, not one covering the airport as a whole, for what is critical to people is the impact on their community. Of course, it would be essential no community is favoured over another.

### 6. Limit night flights

Few flights need to fly at night. Night flying should become the exception.

### 7. Provide generous compensation and mitigation

Communities under flight paths should expect money to pay for effective sound insulation measures. People who lose their homes or who see them devalued in price should be properly compensated. Similarly, whenever a new airport is built, people who lose their homes or land should be generously compensated.

### 8. Ensure best operational procedures are followed

The steepness of the descent or ascent is important for communities, as are measures such as the point aircraft coming into land lower their landing gear.

### These measures would quite noticeably lower the impact of noise without harming an important industry.

(1). file:///C:/Users/Dell/Downloads/12378 SummaryReportV1.0.pdf

https://www.uknoiseassociation.com/ September 2023



### PAPER 6:

### **RAIL NOISE**

Rail noise disturbs far fewer people than noise from aircraft or motor vehicles. But it does remain a problem. Noise from freight and high-speed trains can be a particular concern.

Most of the noise from trains comes from the wheels rolling over the rails. It is the roughness of the rails and the wheels which causes the noise. The more roughness there is, the more disturbing the noise. The roughness is caused by wear and tear. A European Commission study found that roughness may cause noise levels to rise by up to 5dB(A) (1).

#### **Reduce rail and wheel noise**

The noise from rails can be cut by 'polishing' which reduces the roughness of the rails and wheels. The vibrations which cause noise can be minimised with rail dampers, lengths of elastic material fixed to the rails. But the big gains can come from cutting the noise of the wheels by replacing the brake pads used. A change from cast iron to composite material could cut the noise by as much as 50% (2). It would also reduce the vibration from freight trains. There is little difficulty in fitting new vehicles with the new technology but retrofitting is expensive. However the savings are considerable, many arising from the reduced need for noise walls and the insulation of neighbouring buildings.

#### **Install noise barriers**

Richard Greer, Fellow and Director at Arup, told the recent House of Lords investigation into noise (3) "Noise barriers are very effective for railways, because we can put them very close to the trains. A noise barrier can straightforwardly halve the wayside noise level, a 10-decibel or greater reduction."

### Be alert to freight noise

The noise and vibration from freight trans can be disturbing. Freight companies should be required to use the newest rolling stock. Night restrictions might need to be imposed on some lines.

### Put mitigation at the heart of all High Speed Rail plans

There are particular problems with high speed trains. Not, though, when they are travelling at lower speeds, i.e. not much faster than conventional trains. At those speeds they are likely to make less noise than the conventional ones as they will be fitted with the latest noise-reducing features. The problem arises at speeds of more than 250/300 kilometres per hour. That is where aerodynamic noise starts to kick in. Travel at these speeds can also generate ground vibrations, similar to the sonic boom associated with supersonic aircraft. And there is the problem of brake screech as the trains slow down or come to a halt. Although there is work underway to find solutions, tunnels, noise barriers and insulation programmes need to be integral to all plans.

### Cap the number of High Speed trains using a line

A cap should be imposed on the number of trains that will be operated: it would be very difficult, in noise terms, to justify a frequent high speed service on any line.

(1). Technology Report, A Rust, 2003

<sup>(2).</sup> Rail Transport and the Environment, UIC/CER, 2008

<sup>(3).</sup> https://publications.parliament.uk/pa/ld5803/ldselect/ldsctech/232/23202.htm



### PAPER 7:

### **NEIGHBOUR NOISE**

## 11% of people in the UK are extremely disturbed by neighbour noise, with 54% bothered to some extent (1).

There is legislation in place to deal with neighbour noise. The challenge is for the police and local authorities to find the resources and the will-power to use it effectively.

### **Key legislation:**

Environmental Protection Act 1990 - <u>https://www.legislation.gov.uk/ukpga/1990/43/contents</u> Noise Act 1996 - <u>https://www.legislation.gov.uk/ukpga/1996/37/contents</u> The Anti-Social Behaviour, Crime and Policing Act 2014 -<u>https://www.legislation.gov.uk/ukpga/2014/12/contents/enacted</u>

### Solutions:

### 1. Local authorities to be adequately funded and rigorously monitored

Local authorities have a big role in reducing noise. Many currently struggle with funding. Some performed badly even when they had funds. The House of Lords Committee recent examination of noise policy (2) recommended the Department for Levelling Up, Housing and Communities should set out what resources local authorities should have to tackle noise effectively. That makes sense. The Committee also felt DEFRA (the Government department responsible for noise) 'does not appear to be receiving the information it needs to conclude whether its policies are being effectively implemented by local authorities. In our view, annual local authority performance tables should be published.

### 2. Social Housing landlords to up their game

The report of the housing ombudsman (3) is pretty damming; "It is time for landlords to develop a strategy for handling non-statutory noise seriously, sensitively and proportionately. That our maladministration rate is 62% when the noise is non-statutory underscores this need".

### 3. Crack down on noise offenders

This has been made a lot simpler by the 2014 Anti-Social Behavior legislation which allows noise offenders to be prosecuted more easily and quickly. It is time to get consistently tough on noise offenders. Sometimes a warning will suffice but the authorities should not hesitate to use their powers to confiscate their equipment or evict them, if required.

### 4. Give residents the right of appeal

When local authorities fail to crack down on noise offenders, there is little redress for noise sufferers. They can go to court (usually too expensive) or the Ombudsman (whose remit is often too narrow to deal with many of these cases). An Independent Appeals Panel needs to be set up.

### 5. Improve insulation of properties

Poor sound insulation is extensive. However, a nationwide programme to properly insulate all the UK's homes would be expensive. We recommend the worst affected should be done first as part of a 10 year programme to install effective sound insulation in all homes.

- (1). <u>file:///C:/Users/Dell/Downloads/12378\_SummaryReportV1.0.pdf</u>
- (2). https://publications.parliament.uk/pa/ld5803/ldselect/ldsctech/232/23202.htm
- (3). https://www.housing-ombudsman.org.uk/wp-content/uploads/2022/10/Spotlight-Noise-complaints-final-report-October-2022.pdf



### PAPER 8:

### **COMMUNITY NOISE**

Many argue that our towns, cities, parks and streets are noisier than ever before. It need not be like this.

Existing or new legislation should be used to:

### In Neighbourhoods

- clampdown on 'boom' cars, noisy motorcycles and stereo systems blaring from cars
- restrict the playing of amplified music on streets where people work, shop or live
- require all local authorities to have, and enforce, a policy on busking
- enforce and, where necessary, introduce by-laws that forbid the playing of music in public parks

• limit the number of music events allowed in any one park or open space in a year; impose and enforce tough conditions when they are permitted

- close down premises which continue to present a noise problem in a community
- ban petrol leaf blowers (as over 100 American cities have done); bring in tight restrictions on the use of electric leaf blowers

• limit the number of firework public displays each year; promote the use of laser displays; lower the maximum decibel levels for fireworks; introduce tighter restrictions on the sale of fireworks. The latter two measures are in place in Scotland.

### **On Trains, Buses and Tubes**

• cut the number of announcements to the barest minimum: those required by law to assist visually impaired people and those essential for safety and disruption

- reduce the loudness of the announcements
- get tough with people playing music on public transport

There is considerable anecdotal evidence of the lack of enforcement of noise legislation around neighbourhood noise. For example, busking in many places seems to be a free-for-all.



### PAPER 9:

### **BACKGROUND MUSIC**

### Background music can be a big problem in shops, restaurants, pubs, hospitals and elsewhere

It can be particularly problematic when there is literally a 'captive audience': patients in hospital, nursing home residents, workers in shops or restaurants.

### Regulate piped music and televisions in hospitals and nursing homes

No patient should unwillingly be subjected to piped music or televisions in hospitals or nursing homes. Separate television rooms and headphones for people who want to listen to television or music in wards should be mandatory, and also for outpatients.

### Legislate to protect workers in shops, restaurants and elsewhere

Piped music is sometimes loud and often very repetitive. It has been known for shops to play 'Jingle Bells' several hundred times in the run up to Christmas. Such inescapable forced music is particularly stress-inducing. Legislation is needed to give workers the right not to have to listen to it in the same way that non-smokers have gained the right not to have to breathe others' smoke.



### Provide tax-breaks for 'muzac-free' shopping malls

Shopping malls are in many ways like a public street. Particularly in many of the UK's smaller towns and cities, it is difficult to get what you want without visiting the mall meaning you have little choice but to listen to the music.

### Create a mellow mood in venues

There is increasing interest in the work being done by companies such as Mumbli - <u>https://www.mumbli.com/</u> - to create a more mellow mood in venues. Mumbli works with bars, restaurants, cafes and hotels. Based on analysis of data collected by Mumbli's sound monitoring devices, a venue is advised on interior design (foliage, acoustic panels, soft furnishings etc) to reduce the background noise pollution to deliver safe listening sound levels and ease of conversation flow. Venues report increased trade after the work has been done.



### **PAPER 10:**

### **DRONES AND AIR TAXIS**

Over the next few years there are likely to be many more drones and air taxis in the sky. They will have noise implications. Governments will need to take decisions on how to regulate them.

Air taxis and drones are different. The collective term Advanced Air Mobility is confusing. Air taxis are a type of aircraft which can carry both passengers and freight. Drones are relatively small machines which buzz around above our heads. Drones are promoted on their ability to deal with health emergencies and deliver goods in countries with poor transport infrastructure (which they do) but the business case is built on the delivery of meals, coffees and beers. At present, drone noise may not be a problem but a swarm of drones buzzing overhead will be very different. The drone industry acknowledges it is not known if the noise of swarms of drones will be acceptable to the public. And air taxis are not quiet.



### Our recommendations:

### A public debate needs to take place

Currently a lot is happening behind closed doors but most politicians and much of the public are unaware of the developments taking place. What will drones sound like? How noisy are air taxis? Where will they take off and land? If road noise is reduced, will noise from drones become more intrusive? This public debate should inform the regulations on drones and air taxis.

### The commercial use of drones and air taxis should follow a clear regulatory framework

This might sound obvious but there is pressure across Europe from the drone and air taxis industries for their introduction as soon as possible. They are working on the basis that people may grow to accept the noise.

### Manage the revolution!

If the number of drones and air taxis do grow significantly, it will represent the biggest change to our airspace since the growth of aviation and potentially the biggest change to our built environment since mass car ownership. It will be a revolution. It needs to be a revolution based on regulation.

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### RECOMMENDATIONS

### General

- An overall noise reduction target to be introduced
- An advisory panel to be set up to provide independent advice to the Government
- Local authorities to be adequately funded and rigorously monitored
- Noise to be fully integrated into all policies and plans from the start
- Making 'the average person' the benchmark for noise nuisance to be re-examined

### **Noise and Energy**

- A Noise Audit of all energy sources
- Restrictions on the siting of wind turbines
- Solar, but only with tough noise mitigation measures
- Expansion of nuclear
- A Moratorium on heat pumps

#### **Noise and Traffic**

- Lower speeds 20mph to be the norm in built-up areas; reduced limits on 'A' roads and motorways
- Quieter Road Surfaces
- Noise Barriers
- Noise Cameras
- Electric Vehicles
- Traffic Reduction
- Rule out Low Traffic Neighbourhoods

### Aircraft Noise

- Further research and development into quieter aircraft
- Build new airports well away from centres of population
- Encourage quieter alternatives to air travel where feasible
- Share the noise around
- Impose a numbers cap or a noise cap
- Limit night flights
- Provide generous compensation and mitigation
- Ensure best operational procedures are followed

### **Rail Noise**

- Reduce rail and wheel noise
- Install noise barriers
- Put mitigation at the heart of all High Speed Rail plans
- Cap the number of High Speed trains using a line

### **Neighbour Noise**

- Local authorities to be adequately funded and rigorously monitored
- Crack down on noise offenders
- Give residents the right of appeal
- Improve insulation of properties

### **Community Noise**

- clampdown on 'boom' cars and motorcycles
- restrict the playing of amplified music on streets where people work, shop or live
- enforce by-laws that forbid the playing of music in public parks
- limit the number of music events allowed in any one park or open space
- close down premises which continue to present a noise problem in a community
- ban gas-powered leaf blowers, with tight restrictions on electric leaf blowers
- bring in tougher restrictions on fireworks
- cut the number of announcements on public transport to the barest minimum: those required by law to assist visually impaired people and those essential for safety and disruption
- reduce the loudness of the announcements on public transport
- get tough with people playing music on public transport

### **Background Music**

- Regulate piped music and televisions in hospitals and nursing homes
- Legislate to protect workers in shops, restaurants and elsewhere
- Provide tax-breaks for 'muzac-free' shopping malls
- Create a mellow mood in venues

### **Drones and Air Taxis**

- A public debate needs to take place before they are introduced at scale
- The commercial use of drones and air taxis to follow a clear regulatory framework
- Manage the revolution!