

## **Clear Air Strategy for Northern Ireland – A Public Discussion Document – November 2020**

Clean air is vital for human health and our natural environment. Increasingly, research is showing us that the effects of air pollution on human health are more complex and widespread than previously thought.

In Northern Ireland, we face similar issues with air pollution to the rest of the UK and Europe - most notably, levels of nitrogen dioxide found in urban centres, arising principally from road traffic, in particular, diesel engines. In addition to this, we have problems with emissions from household heating and from agriculture.

The data collected on the national air quality networks, particularly the live networks which provide pollution data is considered extremely important to the ongoing evaluation of risk during the Covid 19 pandemic due to the potential impact of air pollution on respiratory illnesses.

Northern Ireland has not had its own dedicated Clean Air Strategy before now. There is, however, increasing recognition that existing air quality policy and frameworks are not delivering the expected improvements in air quality.

There are a wide range of policy options set out in the public discussion document. They are based on research, on examples of best practice elsewhere, and on our understanding of the air quality problems in Northern Ireland.

The public discussion document poses a number of questions under different themes, these are addressed below.

### **Chapter 1 - Sources and Effects of Air Pollution**

#### **1. Should there be legally binding targets for particulate matter, which are based on WHO guidelines?**

Research is increasingly pointing to the conclusion that - for exposure to particulate matter PM2.5 at least - there is 'no safe level' of air pollution, and that exposure to incremental levels of PM2.5 even below objectives can have associated effects on mortality. The WHO has now classified outdoor air pollution as 'carcinogenic to humans'

WHO publish Air Quality Guidelines to support the setting of air quality standards worldwide by considering the body of evidence for key pollutants including

particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>). These guidelines represent recommended maximum levels for pollution in ambient air that countries should aim to achieve and are set purely on an understanding of the human health impacts. In setting these guidelines, WHO does not consider the practicalities of policy development and implementation, including issues of costs and proportionality. Rather, the guidelines are intended to inform the process of setting standards alongside policy discussions.

WHO guidelines for particulate matter both PM<sub>10</sub> and PM<sub>2.5</sub> are more stringent than the corresponding EU Air Quality Directive or UK Air Quality Standard objectives and target values already set.

The Scottish government has already written into legislation the requirement to comply with the WHO guideline on PM<sub>2.5</sub> with England likely to follow suit.

However, it should be noted that significant levels of PM<sub>2.5</sub> come from natural and agricultural sources (bio-aerosols) which are difficult to regulate or attenuate. There is the potential for exceedances of the WHO guidelines across Northern Ireland and further afield, during seasonal periods (pollen release) or weather conditions (winds from the Sahara Desert), indicating poor air quality without a means of resolution.

Elevated levels of PM<sub>2.5</sub> can also be an indicator of household fossil fuel burning, though existing measurements of SO<sub>2</sub> and PM<sub>10</sub> also provide such an indicator.

Acknowledging the above and in recognition of the general direction of travel in GB, it is recommended that the WHO guidelines for particulate matter are adopted.

However, the difficulties to deliver on effective control measures should be recognised for certain seasonal and weather conditions and clear policy measures should be identified in the Clean Air Strategy defining actions to ensure they are met.

## **2. Should all automatic monitoring sites measure at least NO<sub>x</sub> and PM?**

The main source of PM is domestic/industrial whereas NO<sub>x</sub> is road traffic therefore having a single monitoring location for both pollutants would not always be appropriate, particularly where the site is in a residential area.

Measuring both pollutants at roadside sites may be beneficial however some existing site locations may not allow for an additional monitor to be located at it e.g. NO<sub>x</sub> analyser enclosures, located at roadsides may only be capable of holding one monitor.

Air pollutants are measured at 20 automatic monitoring sites in Northern Ireland. The pollutants measured at these sites are: nitrogen oxides, particulate matter,

ground-level ozone, sulphur dioxide, heavy metals, benzene, carbon monoxide and polycyclic aromatic hydrocarbons.

The current approach for air quality monitoring was established to support assessment of compliance with air quality objectives; it was not set up to provide information to inform air quality alerts. Thus, only specific pollutants are monitored at specific locations, where, according to predefined criteria, they are deemed to present a problem. During a widespread air pollution episode, it is likely that sites measuring PM will register 'HIGH' levels, while sites measuring only NO<sub>x</sub> could measure 'MODERATE' or even 'LOW' levels. This presents a misleading picture to the public, since, looking at the Air Quality Interactive map would suggest that air pollution levels are only a problem in particular locations and not others, while the overall extent of the problem is merely limited by available monitoring.

The availability of a greater number of air quality monitoring sites measuring a greater range of pollutants can only improve the resolution of the Air Quality Interactive Map and hence better inform wider society of the air quality in their locality. However, this comes at a cost. Given ever tightening council budgets, it is recommended that additional monitoring equipment only be included within existing automatic monitoring sites, or where new or altered emissions necessitate new monitoring sites in line with current LAQM Technical Guidance. Monitoring should continue to be provided with sufficient funding from central government.

### **3. Should the current urban air quality monitoring network be expanded?**

District Councils review their air quality monitoring network annually through the current Review and Assessment Process and extend or reduce the monitoring sites accordingly. The adoption of the WHO guidelines for particular matter including PM<sub>2.5</sub> will require further monitoring sites to be established to ensure guideline levels are met. Expansion of the current monitoring network would be encouraged but must be supported financially.

### **4. Should a targeted approach to exposure, based on population, be used to expand the current monitoring network?**

The current approach of monitoring based on relevant locations has been effective in identifying areas of exceedance of air quality standards. However, Local Air Quality Management has not been successful in reducing traffic emissions as Councils do not have the necessary powers to deal with roads investment or public transport.

There are a significant number of towns in which there is no air quality monitoring. A targeted approach based on human exposure could set a population threshold - for example, 10,000 people - and require that air quality monitoring is carried out in any settlement with a greater population than this. If this approach were adopted, then the following towns and villages would become part of Northern Ireland's air quality monitoring network:

- Cookstown, Dungannon, Limavady, Enniskillen, Banbridge, Larne, Omagh, Antrim, Coleraine, Carrickfergus and Newtownards.

This would bring to 31 the number of monitoring stations in Northern Ireland, if at least one station was sited in each of the above towns and would provide much greater knowledge about the air quality within these populated areas. Such a network could also be used to raise public awareness and engagement in the issue.

There is a greater recognition that there is no safe level of air pollution (especially with fine particulate matter) and where monitoring networks have previously focussed on areas where a limit value was likely to be exceeded even where only 1 individual is exposed – there is merit in understanding the levels of air pollution where the greatest number of our population reside. Additionally, this will allow the focus of improvements in air quality to be made across NI as a whole using broad interventions in relation to bituminous coal or petrol and diesel cars. In this way the 'hotspot' areas of limit value exceedance may be tackled whilst also producing benefits for the health of the entire population.

#### **5. What are your views on using a population figure of 10,000 as a threshold that triggers the requirement to monitor air quality?**

We agree in principle to expanding an appropriately funded air quality monitoring network, this should provide a wider picture of air quality across the centres of population whilst not precluding the need for monitoring in smaller, discrete areas where it is known that air pollution is a problem due to traffic flow or topographical effects. A population figure of 10,000 seems appropriate in the context of Northern Ireland however the siting of monitoring equipment should be informed by assessment undertaken in accordance with current technical guidance "Local Air Quality Management Technical Guidance (TG16) February 2018.

#### **6. Should biomass heating be discouraged in urban areas or in areas with poor air quality?**

The UK Committee on Climate Change produced a report in February 2019, 'Reducing Emissions in Northern Ireland', setting out how Northern Ireland can reduce its greenhouse gas emissions between now and 2030 in order to meet UK-wide climate change targets. The report recognises there are '*...wider benefits to climate action through reduced air pollution and other health benefits.*' Specifically, in relation to biomass, the report recommends that, '*Biomass for heating in urban areas should not be supported due to air quality concerns.*'

Biomass heating is associated with elevated levels of Particulate Matter emissions. The recent addition of large scale biomass heating in schools and leisure centres within urban areas contributes the elevated levels of PM<sub>10</sub> and PM<sub>2.5</sub>.

In those areas where existing air quality is poor as a consequence of PM<sub>10</sub> and PM<sub>2.5</sub> (whether urban or otherwise) it is recommended that biomass heating be discouraged.

Fossil fuels may continue to be part of the energy mix for the foreseeable future, but to meet the government's target of net zero carbon will require the introduction of more sustainable energy sources and the electrification of heating over the next 10 to 20 years. Consideration needs to be given in any future decisions on biomass to other strategies which are encouraging the introduction of renewable heating sources.

## **7. Should the connectivity between air quality and noise issues be improved through requiring consideration of each in Noise and Air Quality Action Plans?**

In its assessment of the environmental burden of disease in the European region, the World Health Organisation has ranked air and noise pollution as the two leading stressors impacting upon human health.

Four Candidate Noise Management Areas have been identified in the Department for Infrastructure's Roads Noise Action Plan 2018-2023 produced for compliance with Round 3 of the Environmental Noise Regulations (Northern Ireland) 2006. Two of these Candidate Noise Management Areas are in close proximity to existing Air Quality Management Areas at the Buncrana Road and Dales Corner.

Air and noise pollution share many of the same sources such as industry, aircraft, railways and road vehicles. Improving the quality of air can have a subsequent impact on improving the quality of noise, but only where mitigation measures are complementary. There is the potential that in undertaking improvements to air quality (e.g. inclusion of an additional lane of traffic) this can have a detriment for

noise impact (i.e. bring road noise closer to resident), therefore holistic measures are required.

This can be achieved through better connectivity between the Noise and Air Quality Action Plans however it must be recognised that the key authorities who can 'action' the action plans lie outside of local government (i.e. Department for Infrastructure, Translink, Northern Ireland Environment Agency) and without ownership, improvements to air quality will not be achieved.

**8: Given that air pollution, carbon emissions, and noise often share the same sources, what are your views on including noise and carbon emissions as a consideration in Low Emissions Zones?**

Low Emissions Zones are primarily focused on transport but could be widened to also include industrial and household emissions. There is a significant public awareness of climate change issues and these are intrinsically linked with the air pollution and noise pollution issues in urban areas – particularly transport emissions. We feel that there is a significant opportunity to use LEZs to tackle all of these issues and to gain a much higher level of public engagement and support than if they were tackled discretely.

**Chapter 2 - Transport Emissions**

Efficient transport movements are vital to our economy and way of life, and yet road transport is one of our most significant sources of air pollution.

While road transport is responsible for a range of pollutant emissions, those of greatest concern are in particular nitrogen oxides and particulate matter.

High concentrations of nitrogen dioxide monitored at ground level in our towns and cities are largely due to vehicle exhaust emissions.

**9: Are there any potential measures not included here that you believe could help encourage a shift away from private car use to walking, cycling, and public transport?**

The discussion document presents a number of typical measures to encourage a shift away from private car use.

Additional considerations would be reduced transport fares, fare subsistence and enhanced working from home policies.

With regard to encouraging working from home, the current Covid-19 pandemic has demonstrated the effectiveness of home working or blended working (part home/part office) for a large proportion of the population. This has significantly reduced journeys and eased the morning and evening rush-hours with a notable improvement in air quality.

There may also be the possibility of developing Public Sector hubs as an alternative to traditional decentralisation. These would provide shared 'hot-desk' office accommodation for a range of government departments/public services in smaller towns across Northern Ireland. This could reduce the need for long commuter journeys to larger urban centres, and would increase the likelihood of workplaces being accessible by walking or cycling. There may also be economic benefits in regional towns as they could make use of vacant commercial property which is a common blight of high streets in Northern Ireland.

Design of our public spaces and urban centres is a vital consideration. Emphasis should be placed on the attractiveness of such areas for the pedestrian and cyclist rather than the private car.

Derry City and Strabane District Councils draft Local Development Plan, North West Greenway Plan and Green Infrastructure Project encourages modal shift by creating opportunities for walking and cycling providing for improvement in air quality and wider benefits for the environment and health.

Cycling – A lot of the examples in the document are city-based examples. To reduce emissions in towns and rural communities and encourage a modal shift from car use to active travel, particularly for shorter journeys, a cycling infrastructure needs to be developed/ established in towns and surrounding areas.

In addition, additional cycling amenities should be developed for children and families to encourage this mode of transport and pastime. There are excellent bicycle tracks and parks in the likes of Belfast, and in Forest Parks dispersed throughout N Ireland, however more Councils should consider more kid-friendly cycling amenities and parks to encourage this active travel and pastime. If families have to travel long distances by private car to access this type of park/amenity, this adds to carbon emissions if travelling by diesel or petrol car.

For some commuting journeys, it will be difficult to encourage a modal shift from private car to public transport eg bus, if more than one bus journey is needed to reach your place of work. Having to wait on connecting buses significantly increases journey times. The shift to public transport will be much easier for those living closer to their places of work and for shorter journeys.

The COVID 19 pandemic has been instrumental in changing people's attitudes towards walking as more people are not out and about on a regular basis. It has also reduced the number of people using private cars as home working is increasingly popular. However, the threat to spreading the virus has had a negative effect on public transport with very few people using buses. Hydrogen buses and electric buses will be introduced in the next few years, but getting people to use public transport again will be a challenge.

**10: What would encourage you to consider buying an electric vehicle as your next car?**

Electric vehicles have a number of air quality benefits with none of the exhaust emissions at source associated with petrol and diesel vehicles. In addition, the electricity can be generated by a renewable power supplier.

Until such times as the cost of ownership of an electric car falls below that of conventional propulsion, there is unlikely to be a major uptake of electric vehicles. The strategy of interest free loans, improving the existing charging infrastructure and improvements in vehicle range are all positive steps in encouraging uptake. The UK Government commitment to the phase out of new petrol and diesel engine sales is also welcomed as a key indicator for the need for supporting industries and technologies to develop to support this ambition.

Travel subsistence policies in the public and private sector could also be amended to incentivise the use of electric vehicles.

**11: Do you think that DAERA should develop a Low Emissions Zone Framework for**

**dealing specifically with transport emissions in Northern Ireland?**

**Or**

**Would you be in favour of Low Emissions Zones for urban areas also covering other**

**sources of pollution, for example those from household heating?**

Low Emission Zones can incorporate many measures, such as might already be found in AQMA Action Plans, but at their most stringent they entail the restriction of certain vehicle types, or introduce monetary charging for vehicles to enter. They are a means of providing an overarching umbrella approach to tackling air quality in areas of exceedance.

A Low Emissions Zone Framework should be developed specifically dealing with transport emissions only as the paper states that Low Emission Zones are suited to NO<sub>2</sub> emissions in the city centre and not trunk roads (p69). Household emissions can continue to be addressed through AQMAs and Smoke Control Areas.

However, if it is preferred that Low Emissions Zones will incorporate all sources of pollution within a designated zone, we would request the publication of a discussion paper on the Low Emissions Zone Framework and further detail on the likely outworking and outcomes.

### **12: What are your views on vehicle charging cordons for entry to the most polluted parts of urban areas in Northern Ireland?**

Vehicle charging cordons introduced in England have been successful in improving air quality in urban centres such as London, Manchester and Birmingham. The introduction resulted in a modal shift to public transport, with the public still wishing to enter the cities. However, alternatives to the car in Northern Ireland are less attractive due to public transport outside of Belfast providing a limited service.

Until such times as viable alternatives to the car are available, vehicle charging cordons are unlikely to provide the necessary reductions in emissions and may result in increasing traffic at other locations/junctions and could potentially result in AQMA or LEZ implementation at these locations.

### **Chapter 3 - Household Emissions**

Emissions from household heating present a significant problem for local air quality. The primary pollutants studied here are particulate matter, polycyclic aromatic hydrocarbons (PAHs) and to a lesser extent sulphur dioxide. These pollutants are indicative of the level of pollution from household combustion of solid fuels. The levels of pollutants emitted by home heating activity depend on a) the fuel being burned, and b) the appliance used to burn the fuel.

The highest levels of pollutants are emitted from solid fuels, such as coal, peat and wood, although emissions are significantly reduced in the case of 'smokeless' coal and other 'smokeless' fuel products, which include manufactured fuels such as ovoids. Oil and, to an even greater extent, natural gas emit far less air pollution.

We note with concern the levels of PAHs and Black Carbon as indicators of pollution from household emissions. It is very concerning that levels in Northern Ireland

appear disproportionately high and are in line with highly industrialised areas of England and Wales. The information contained with the discussion document points towards household burning from a small percentage of properties and irregular use of stoves as being a key factor in Northern Ireland and strongly indicates the need for change.

It is suspected that the general public has little understanding of these levels or the impacts of their actions. Enforcement action from Central Government and Local Councils is likely to be resisted or perceived negatively without some awareness raising amongst the population. It is strongly recommended that this is carried out across Northern Ireland and co-ordinated centrally in advance of any of the new enforcement measures discussed in this chapter.

### **13: Should urban areas, in their entirety, be designated as Smoke Control Areas?**

The Clean Air (NI) Order of 1981 introduced controls for the emission of smoke in urban areas. Under the Order, district council can declare parts of their district as Smoke Control Areas (SCAs). In a SCA, the emission of smoke from a chimney is prohibited. Households may only burn 'authorised fuels' in any appliance, or use 'exempted appliances' when burning specifically prescribed fuels other than authorised fuels. This means that the burning of bituminous ('household' or 'smoky') coal in an open fire would be prohibited entirely within urban areas be it for primary or secondary heating.

Using the existing Clean Air Order framework, when new/extended Smoke Control Areas are declared, then district councils and the Department must contribute to the cost of any work that householders must carry out (for example, installing oil-fired or gas heating systems) to ensure that they are able to comply with Smoke Control provisions.

We strongly agree that designating urban areas in their entirety will allow for easier enforcement by combining the existing patchwork of Smoke Control Areas into a single area. The benefit will be a reduction in the habitual burning of 'smoky' fuels, with the associated improvements to air quality albeit involving only a relatively small number of dwellings.

Overall costs to support householders with respect to conversion works should not be extensive as only a very small percentage of dwellings will be eligible for grant support. Those built post 1964 and/or those with a primary smokeless means of heating will not attract grant support.

The change involving larger numbers of households will therefore be to prohibit the burning of smoky fuels such as peat, wood and household coal within secondary heating systems such as stoves. The use of such secondary heating through stoves has become a popular trend within the past 10 years and will require some buy-in from the public to be successful.

A full review of enforcement powers for Council officers will be necessary should Government wish to ensure a high level of compliance. Officers will need the power to contemporaneously inspect the fire and fuel within it at the same time as the emission is observed from the chimney pot rather than being required to provide a period of notice to the homeowner. The chain of evidence breaks down when inspecting residential fuel supplies 2-3 days after the smoke has been observed and is much less likely to result in enforcement action where a smoky chimney is witnessed.

In addition, powers will be needed to take samples of the fuel being combusted to establish whether it is or is not smokeless fuel.

Councils remain concerned that some fuels labelled as smokeless do not perform as such after the lighting up period. The offences as currently drafted only relate to smoke caused by the burning of a fuel that is not smokeless.

**14: Should the law should be changed so that non-smokeless fuels may not under any circumstances be sold in Smoke Control Areas?**

Legislation states that unauthorised fuels are only allowed to be sold in Smoke Control Areas where the use is not intended within the Smoke Control Area. In practice, this is difficult to monitor and enforce. A further restriction whereby non-smokeless fuel may not be sold in a SCA will make it more difficult to obtain smoky fuel but not prohibitively - those wishing to flout the law, or simply to purchase cheaper fuels could still purchase 'smoky' fuels outside of the Smoke Control Area.

**15: Should government ban the sale to the general public of smoky/bituminous/household coal in Northern Ireland?**

The strongest evidence for air pollution from household heating comes from levels of PAHs monitored at sites here in Northern Ireland. The three Northern Ireland monitoring sites – Derry/Londonderry Brandywell, Ballymena Ballykeel and Kilmakee Leisure Centre - have recorded the first, fifth and sixth highest annual mean values of Benzo[a]Pyrene in the UK in 2017.

B[a]P monitored in urban settings in Northern Ireland are comparable in magnitude to those monitored in locations with heavy industry in England and Wales illustrates that there is a different emissions profile here. It also demonstrates a significant problem with B[a]P levels in residential settings in Northern Ireland.

The Republic of Ireland recently banned the sale of 'smoky' coal in towns over 10,000 population and have already noted improvements to air quality, although some unauthorised burning still occurs.

The ban of smoky coal in Northern Ireland would significantly improve air quality in local residential settings. It would also have the benefit of reducing regulatory burden as it could be argued that the need for smoke control areas has been negated through lack of provision of 'smoky' coal.

#### **16: Should government ban the import, into Northern Ireland, of high-sulphur coal?**

Burning high sulphur fuels leads to increased emissions of sulphur dioxide and particulate matter in the atmosphere.

Regulations currently specify that the content of sulphur that is permitted in solid fuels for sale in Northern Ireland may not exceed 2 per cent. Importation of high-sulphur coal is not prohibited however a ban on the importation would be expected to have little effect upon local air quality assuming compliance with the regulatory requirements, but would be nonetheless welcomed as a general means of pollution reduction.

We note with concern that some manufactured smokeless fuels and household coal can have levels in excess of this limit. Councils in Northern Ireland have recently communicated with local coal suppliers to remind them of the need to ensure compliance with the 2% sulphur content limit. A failure of compliance in this regard will result in higher sulphur dioxide and particulate matter in urban areas reliant upon solid fuel burning. The 2% limit is set in 1998 regulations and it is strongly recommended that these be reviewed to reflect modern analytical methods to enable Councils to effectively enforce these requirements.

#### **17: Should government ban the sale to the general public of unseasoned wood in**

**Northern Ireland at retail outlets?**

Defra (England) have in recent years been actively addressing the issue of household emissions, in particular those from wood burning. All wood sold for domestic combustion in volumes under 2m<sup>3</sup> must have a moisture content of 20% or less. This is in line with measures within the Republic of Ireland.

Banning the sale of unseasoned wood in Northern Ireland will assist with reducing emissions and would therefore be welcomed.

Not all unseasoned wood burned in Northern Ireland is purchased by retail sale. Often wood is sourced from fallen trees, waste etc. and this is rarely seasoned adequately. It would appear impossible to enforce a prohibition on the use of unseasoned wood, however, efforts should be made to raise awareness of the pollution impact of its use amongst the general public. This is particularly important as many may well perceive that their use of a renewable fuel source is actually good for the environment.

**18: Are there any further things you think that central and local government could be doing to address air pollution from burning solid fuels?**

A small levy on solid fuels would assist in shifting the public away from burning solid fuels to other alternatives. Income raised could be ring-fenced to support conversions to less-polluting heating systems for those in need of financial support.

Smoke Control Areas are historically difficult to enforce, largely due to the way that the regulations are written. The Clean Air (Northern Ireland) Order 1981 is out of date and needs reviewed/replaced as part of a wider clean air bill required to incorporate recommendations of the final clean air strategy. A full review of offences and enforcement powers should be undertaken. The use of fixed penalty notices for breaches of smoke control legislation, combined with amendments to the legislation itself to make evidence-gathering more effective, would assist with swift and targeted enforcement.

We consider it necessary raise awareness across Northern Ireland of the need to use less polluting solid fuel and especially the need to cease the use of unseasoned wood. Changes to behavioural habits across our urban areas are unlikely to be well-received or widely complied with unless those affected are informed about why the changes are happening and the benefits that will result to human health and the local environment.

## **Chapter 4 - Agricultural Emissions**

Agricultural activities can give rise to a number of different air pollutants.

Particulate matter, emitted directly from poultry and pig farming, is estimated at 22.7% of Northern Ireland's total PM<sub>10</sub> emissions in 2015. The main pollutant of concern from agricultural activities is ammonia. As well as acute effects at high concentrations, ammonia can indirectly have significant impacts on human health, through the formation of secondary inorganic (ammonium) compounds, which are a component of fine particulate matter, specifically, PM<sub>2.5</sub>.

### **19: Do you think that the process in place to address ammonia emissions in Northern**

#### **Ireland is appropriate?**

Ammonia is not classed as a local air quality pollutant. This means that there are no limits or targets for ammonia in ambient air in the EU ambient air quality directives 2008/50/EC and 2004/107/EC, which cover, for example, pollutants like NO<sub>x</sub>, PM and SO<sub>2</sub>. Nor are there limits in ambient air for ammonia in the UK Air Quality Strategy; district councils do not measure levels of ammonia in urban centres.

Ammonia is to some extent, controlled under the Pollution Prevention and Control Regulations, which specify the amount of ammonia which may be emitted from each individual industrial premise or agricultural installation exceeding certain specified thresholds. The thresholds are for example: for poultry installations, 40,000 birds; pig farms with more than 750 sows or 2,000 production pigs of at least 30kg. However, there is currently no overall statutory means of limiting ammonia emissions across Northern Ireland.

The management and application of manure from livestock housing is the key driver of ammonia emissions in Northern Ireland and is responsible for a combined 85% of all agricultural emissions. Given ammonia's significance in concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> within Northern Ireland it is impossible to separate agricultural emissions from local levels of particulate pollution.

The Department has set up an Ammonia Project Board, specifically tasked with examining the issues and evidence surrounding the ammonia problem in Northern Ireland, its negative impacts on biodiversity and habitats, and the difficulties it presents for the expansion of the agricultural sector in Northern Ireland.

The Ammonia Project Board is welcomed. It is hoped that this Project Board will bring about significant reductions of ammonia within the agricultural sector which

will allow the necessary headroom for industrial expansion to meet economic drivers. The Project Board should be required to have consideration of the health-based impacts of PM10 and PM2.5 levels within air quality standards as agriculture is the key emitter. Currently the focus of the Board is very much upon environmental protection, however, it is important that the work of the Project Board is not treated separately to the human-health focussed control of local PM10 and PM2.5. In addition, decreasing the thresholds for IPPC for poultry and pig installations will bring more of the industry under regulation and provide the opportunity to further reduce emissions from numerous smaller installations.

Given our levels are higher than in the rest of the UK, there is a need for much more stringent controls to reduce ammonia emissions to sustainable levels, given their impact on biodiversity and human health.

## **Chapter 5 - Industrial Emissions**

Industrial activities play an important role in the economic well-being of Northern Ireland by contributing to sustainable development and growth, but this can also have a significant impact on the environment. The industrial sector accounts for a significant proportion of air pollution emissions in Northern Ireland and the sources include various types of activities ranging from large power stations to petrol station forecourts. Air pollution emissions from industry are, however, subject to strict regulation.

### **20: Are there any industrial sectors or air pollutants that require new or further investigation?**

It is noted that there is a recent trend in diesel car and HGV modification to remove the diesel particulate filter to improve efficiency, performance or bypass an error code that would fail an MOT/PSV. Persons who provide such a service openly advertise on social media, business websites and trade publications. Given the significant increase in emissions as a consequence of diesel particulate filter removal, focus should be given to this growing sector.

Carbon emissions from industrial sources should also be reported on an annual basis.

It is noted that the Clean Air Strategy Public Discussion Document focuses on environmental air pollutants. Consideration should be given to advice produced by the National Institute for Health and Care Excellence (NICE) on air pollution which includes recommendations on indoor air quality.

## **Chapter 6 - Local Air Quality Management**

The Environment (Northern Ireland) Order 2002, as amended, requires local government councils to review the quality of the air within their districts. Part of this review is an assessment of the quality of air against an agreed set of standards. Where these standards are failing to be achieved the council may designate Air Quality Management Areas (AQMAs), and an Action Plan must be developed for each area. This management system lies at the foundation of improving air quality in Northern Ireland.

### **21: Should councils more widely adopt low-cost air quality monitoring systems, for screening purposes?**

With the emergence of low-cost monitoring technologies, there is now scope for increased monitoring of pollutants such as PM and NO<sub>x</sub>. It is acknowledged that the accuracy of these instruments cannot be validated in the same way as certified automatic monitoring systems in place at permanent monitoring stations. However, there is perhaps a place for these monitors in the LAQM system, for screening purposes. Under the LAQM grant scheme, councils could consider purchasing and installing low-cost monitors, which would enable them to undertake screening assessments for air quality. These screening assessments could help councils decide whether or not more detailed assessments of air quality are needed and whether certified automatic monitoring equipment should be installed.

The use of low-cost air quality monitoring systems for screening purposes is welcomed, with co-location tests demonstrating good correlation with certified equipment.

### **22: Should AQMAs be discontinued and replaced instead with Low Emissions Zones, which cover all aspects of air quality, including Smoke Control?**

Low Emission Zones can incorporate many measures, such as might already be found in AQMA Action Plans, but at their most stringent they entail the restriction of certain vehicle types, or introduce monetary charging for vehicles to enter. They are a means of providing an overarching umbrella approach to tackling a specific air quality issue in broad areas of exceedance.

As previously stated, our preference is that Low Emissions Zones should be developed specifically for dealing with transport emissions and other aspects of air

quality including smoke control should be dealt with separately through AQMAs and Smoke Control Areas.

We would welcome a discussion paper on a Low Emissions Zone Framework and further detail on the likely outworking and outcomes prior to determining a preference of the existing AQMA approach.

Low emission zones for carbon, but that will be introduced through the energy/carbon reduction strategy

**23: Where applicable, should the entirety of urban districts should be declared as AQMAs (or Low Emissions Zones)?**

The current approach with AQMAs has been to focus on pollutant hotspots. This has proven unsuccessful in dealing with transport emissions. However, emerging best practice suggests solutions to air pollution hotspots are more readily achieved by spreading the focus to wider urban areas; for example, traffic emissions at a particular junction are best considered in the context of wider urban infrastructure. This approach means that there is less risk of pollution simply shifting from the known hotspot to another location.

A shift from localised AQMAs to wider urban LEZs could see the following:

- Expanded geographic coverage for improving and safeguarding air quality;
- Consideration of all aspects of air pollution;
  - A greater focus on the use of transport and the mitigation of emissions across the wider population rather than just for those who happen to live in or drive through hotspot areas;
- Improved public communications on air quality;
- Unlike AQMAs, the impetus would not be to revoke the LEZ, but rather to keep it in place to continue to safeguard air quality. Instead, the goal would be to improve and then maintain the status of the LEZ. In turn recognising that there is no 'safe' level for some pollutants.

Thus were applicable, we would support wider urban AQMAs/LEZs in improving air quality.

Low Emission Zones should also consider to carbon emissions and how they will implement any future energy/carbon reduction strategy.

**24: What are your views on having a traffic-light system for councils to report on?**

Such a system would aid understanding by the general public with respect to air quality in their area, which in turn could help obtain support to address air quality issues and provide accountability to relevant authorities.

However, it must be highlighted that the divergence between LAQM reporting and central Government reporting for (pre-EU exit) Directive compliance creates significant confusion. The vast majority of AQMAs are not reported upon by central Government which leads to the perception that outside of the Belfast urban area there are no air pollution issues. Furthermore, the measures required to address transport emissions for Directive compliance (electric vehicle infrastructure, public transport investment etc.) are exactly the same as those necessary to address AQMAs (albeit involving smaller numbers of exposed persons).

We strongly believe that the systems of central and local Government reporting must be aligned such that they complement each other. Measures that are being carried out centrally by Government Departments must be reflected in Local Air Quality Action Plans as to omit them leaves the Action Plan only populated by 'lighter', educational and promotional measures within the remit of Local Councils.

Therefore, we recommend that central Government reports annually on the measures being developed and carried out at that level and that this information is then incorporated into each of the Council's LAQM Action Plan progress reports.

An aligned system will place the focus on national measures where this is required – as LAQM has not had the ability to tackle transport emissions – and will be easier for stakeholders and members of the public to understand.

**25: What are your views on the proposals to change the LAQM process, in particular to grant funding for outcome-based measures as opposed to monitoring?**

There is a need to provide grant funding for both monitoring and outcome-based measures. Without continued monitoring, it will be difficult to determine the success of outcome-based measures.

**26: Are there any further measures you would suggest to help achieve a significant reduction or revocation of all AQMAs by 2021?**

Derry City and Strabane District Council currently have 4 AQMA's that were declared for exceedance of the annual mean objective for nitrogen dioxide ( $40 \mu\text{g}/\text{m}^3$ ). The main source of nitrogen dioxide at these locations is road traffic. These 4 AQMA's are located along main arterial routes at

1. Creggan Road, Marlborough Terrace, Windsor Terrace, Creggan Street
2. Dales Corner
3. Buncrana Road/Racecourse Road
4. Spencer Road/ fountain Hill

There are currently no further measures to assist with the revocation of these AQMAs by 2021 however the department are aware that during the current pandemic increased home working etc. has led to reduced traffic and eased the morning and evening rush-hours with a notable improvement in air quality.

## **Chapter 7 – Communication**

### **27: Do you have any suggestions for the membership of the Air Quality Forum?**

DAERA has committed to setting up an Air Quality Forum, which is intended to, among other things, oversee measures associated with improving the air quality indicator, as well as to discuss any reforms coming from this review of air quality policy. DAERA feel that the Forum would also be the ideal place to discuss, with stakeholders, the more effective communication of air quality impacts and the role that individuals can play in reducing air pollutant emissions.

We would agree that an Air Quality Forum would also be the preferable platform to discuss, with stakeholders, the more effective communication of air quality impacts and the role that individuals can play in reducing air pollutant emissions.

It is imperative that local government is suitably represented at the AQ Forum, along with those bodies that influence outcomes (e.g. Translink, industry etc.), with a strong commitment from central government including DFI and DFC, (e.g. Land Use Planning Regime). Other agencies that should be considered in membership include EA and NIHE.

Locally, we have a number of forums and stakeholder groups such as Energy and Climate which could also incorporate the Air Quality Forum into one overarching group. There should also be a Citizen's Assembly to look at the issues involved in Climate/energy & Air Quality. There needs to be communications programme to begin the process of behavioural change, again linked to Climate & Energy.

## **28: Is increasing awareness of air quality impacts at a local level is the best way of**

### **promoting behaviour change by individuals to reduce air pollution?**

Local public awareness has a role alongside the use of penalties and incentives where appropriate. Regional initiatives such as Clean Air Day are worthwhile and initiatives highlighting linkages other strategies such as climate change and sustainability may help to promote behavioural change.

However, heating of homes and transport emissions are necessities of daily working and living. Drivers do not sit in traffic congestion because they want to; it is not simply a matter of informing the public regarding emissions and hoping that their conscience will bring about a behaviour change.

Specific guidance on what actions members of the public could take to reduce their emissions should be provided. For example, it may be obvious that the burning of smoky coal causes air pollution, however if individuals are not receiving advice to switch to smokeless fuel, they may see no reason to change this behaviour/habit. If people are needing to upgrade their primary source of heating eg. oil boiler, and they are not aware of lower emission alternatives, they will simply seek a replacement. If information was made available to them on alternative lower emission sources of heating, this would cause widespread behavioural change and a reduction in household emissions.

Often improving energy efficiency, through the likes of improved insulation and draught exclusion, and through double-glazed windows, can be more obvious to the general public, as there are often more consumer awareness campaigns around this area, with many local companies often offering this service, sometimes free of charge to eg. pensioners.

Likewise, there is quite a lot of awareness around the effects of fossil fuels from transport, given the advertising campaigns for electric and hybrid vehicles and given their increasing visibility on our roads, but there appears to be less public debate around the emissions from our primary and secondary sources of domestic heating, and what we could do to reduce these emissions.

Better alternatives must be presented to the public driven by Government investment and where necessary support for technological developments. The most obvious focus will be expected to be in relation to electric vehicles.

Additionally, use of appropriate regulation to phase out the most polluting activities combined with support for those adversely affected by any such change.

Successful examples for this type of intervention already exist. The introduction of Smoke Control Areas made a huge improvement in urban air quality and smog s now a very rare occurrence rather than a regular one. Lead emissions were all but eliminated by regulation phasing out 4-star fuel combined with support for the development of unleaded fuel and engines.

**29: Do you have any further comments or suggestions on how the impacts of policy**

**interventions can be tracked in Northern Ireland.**

The continuation of air quality monitoring is key to tracking progress. Other sources of information include the use of health statistics, counts of cycling, walking or vehicle activity.

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