

ZERO WASTE ALLIANCE IRELAND

Towards Sustainable Resource Management



Submission to the Department of Environment, Climate and Communications on the National Air Pollution Control Programme

22 January 2021

Zero Waste Alliance Ireland is a member of



and



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ZERO WASTE ALLIANCE IRELAND

Towards Sustainable Resource Management

**An Tinteán Nua,
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Castlepollard,
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22 January 2021

Draft National Air Pollution Control Programme Consultation,
Air Quality Division,
Department of Environment, Climate and Communications,
Newtown Road,
Wexford,
Y35 AP90.

BY EMAIL TO:
airquality@decc.gov.ie

Dear Sir / Madam,

Observations on the National Air Pollution Control Programme
Submission by Zero Waste Alliance Ireland to the Department of
Environment, Climate and Communications

On behalf of Zero Waste Alliance Ireland (ZWAI), we attach our observations in response to the Public Consultation issued by the Department of Environment, Climate and Communications on the 09 December 2020, on the National Air Pollution Control Programme (NAPCP), which the Department is currently updating.

Zero Waste Alliance Ireland (ZWAI) is pleased to have the opportunity to make a submission on the updating and preparation of a new and revised National Air Pollution Control Programme.

You may be aware that over the past two decades, ZWAI has expressed concern about ambient air quality in Ireland; we have made submissions to An Bord Pleanála and the Environmental Protection Agency on the need for greater control over emissions of the five NEC pollutants to atmosphere from different sectors. On other occasions, we have pointed out that granting consent for additional emissions of particulates and volatile organic carbon compounds is in direct conflict with the principles and the requirements of all the UN and EU Conventions dealing with air pollution (Stockholm Convention on POPs, Convention on VOCs, Climate Change Convention, etc.).

ZWAI has also expressed concern and made submissions on the need for much improved air quality monitoring, enforcement of emission limits, and for greater understanding of the effects of substandard air quality on public health; and we have strongly advocated that planning and licensing decisions and the conditions attached to these decisions should take account of the impact of permitted emissions on public health. It has been our unfortunate experience that the relevant competent authorities have not taken public health issues into account at a sufficiently detailed and local level; while other agencies (such as the Health Service Executive) have neither the competence nor the necessary people and facilities to undertake monitoring of the effects of air quality on public health.

We have addressed some of these issues in the attached submission, which, together with this letter, we trust will be considered by the Department of Communications, Climate Action and Environment.

Pollution, including air pollution, is one of the principal environmental risks to human health in the world. Even in relatively wealthy Europe, exposure to air pollution was responsible for an estimate of more than 410,000 early deaths in 2016 alone. Children are particularly at risk; and research undertaken last year has shown that air pollution is linked to significantly higher rates of death among people infected with Covid-19.

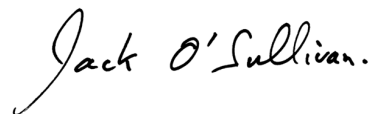
Some of the principal concerns and suggestions in our submission are:

1. The draft NAPCP does not place sufficient emphasis on the urgent need to consider human health as one of the principal reasons for reducing air pollution and improving air quality; and the programme is very weak on the urgent need to establish a greatly improved monitoring network, and to identify at small-scale local level a statistically robust relationship between air quality and human health and well-being, as measured by public health data;
2. We welcome the statements that "*PM_{2.5} is the key driver of health impacts from air pollution*" and that "*there are no 'safe' levels of air pollution from a health perspective*"; but we are disappointed that there is no mention of emissions of PM_{2.5} from large industrial plants;
3. The NAPCP should specifically state that the competent authorities which grant consents for industrial plants, and which have the responsibility to attach conditions to these consents, and (in the case of the EPA) have the responsibility of monitoring atmospheric emissions from them, should withhold consent until it can be shown conclusively, based on scientific and epidemiological evidence, that current emissions are not causing harm to the population, and that future emissions will not cause harm;

4. Modelling of existing and proposed emissions to atmosphere by some industrial plants have been found to lack essential information, are based on inadequate data, and therefore provide results which fail to safeguard human health;
5. We provide a relevant example of a case study showing that an industrial applicant for a licence which would permit emissions to the atmosphere may not always provide accurate information; and, in some cases, may provide misleading information;
6. A much tighter regime of air pollution control of industrial emissions – both proposed emissions and existing emissions – should be included as a matter of policy in the final revised National Air Pollution Control Programme; the Environmental Protection Agency can operate only within the framework of Government policy; and, if that policy is weak, the Agency is unable (or less willing) to impose more stringent conditions on industrial emitters and subject them to more frequent and detailed monitoring;
7. Using average emission limit values as a means of monitoring and controlling industrial emissions to atmosphere is totally inadequate, as these averages mask high-risk emission spikes; and such spikes have been identified in the Mungret area of Limerick, in the vicinity of a cement production plant;
8. Exposing members of the public, or allowing members of the public to be exposed, to significant, short-duration (i.e., less than 24hr), exceedances of WHO guidelines should not be permitted;
9. Continuous independent air pollution monitoring is vitally necessary; and the results should be available in real time for local citizens and other interested people and groups to view and examine; anything less is inadequate;
10. “Citizen science” can play an important and valuable role in the monitoring of air pollution; and the value and acceptability of citizen science is well recognised in other EU Member States;
11. Given the important role of cycling in reducing car dependency, we find it extraordinary and unexplainable that the draft NAPCP fails to mention the urgent need to provide the necessary cycling infrastructure; especially as the report acknowledges that *“there may be a shift to cycling/walking as people avoid mass transit modes”* as a result of the COVID-19 response;
12. We recommend that streets be retrofitted with safe cycleways, in particular, to connect residential areas to schools and shopping areas, and to encourage commuting by bicycle;

13. We express serious concern that many local authorities have failed to provide cycling infrastructure, have failed to communicate with other state agencies, failed to apply for EU Intereg funding, and have not embarked on serious investment programmes to promote and encourage walking and cycling;
14. We cite cases where cycling advocacy groups have been ignored by local authorities, or are reluctant to engage in discussions – a response which can only lead to continuing car dependency with resulting adverse impacts on air quality;
15. It is essential that the Environmental Protection Agency must become more pro-active in ensuring that holders of Industrial Emissions licenses are complying with conditions and regulations; self-monitoring and self-regulation do not work to the advantage of either the environment nor local inhabitants who are exposed to atmospheric emissions from licensed industrial plants;
16. The EPA's current blanket statutory immunity when carrying out its functions is difficult to justify in a modern context and should be revised; this immunity is likely to be inconsistent with the State's obligation under Article 40.3. to defend and vindicate the citizen's personal rights; and we advocate that this immunity should be removed;
17. The public right to a clean environment, i.e., to an environment "*that is consistent with the human dignity and well-being of citizens*", and is therefore "*an essential condition for the fulfilment of all human rights*", is now a justiciable right, and is therefore an appropriate ground for taking proceedings against a Government Department or Agency which fails to uphold that right.

Yours sincerely,



Jack O'Sullivan

On behalf of Zero Waste Alliance Ireland.

ZERO WASTE ALLIANCE IRELAND

*Advocating Sustainable Resource Management and the
Circular Economy*

Submission to the Department of Environment, Climate and Communications on the National Air Pollution Control Programme

CONTENTS

	Page
1. INTRODUCTION	1
2. ZERO WASTE ALLIANCE IRELAND	3
2.1 Origin and early activities of ZWAI	3
2.2 Our basic principles	4
2.3 Our continuing work and activities.. .. .	4
3. AIR POLLUTION AND HUMAN HEALTH.. .. .	8
3.1 Air pollution as a globally significant cause of adverse health	8
3.2 Adverse health effects of micro-particulates emitted to the atmosphere	10
3.3 Adverse health effects of heavy metals and dioxins emitted to the atmosphere	13
3.3.1 Heavy metals in PM _{2.5}	14
3.3.2 Dioxins and the food chain	14
3.3.3 Conclusions of this section.. .. .	15
3.4 An example of an industry's failure to model atmospheric emissions and their human health effects through the food chain	15
3.4.1 An application for an industrial emissions licence ignored the existing background intake of dioxins	19
3.4.2 The intake of dioxin-like PCBs has been omitted	20
3.4.3 Conclusions from this section of our submission	22
4. MONITORING OF AIR POLLUTION	23
5. TRANSPORTATION AND AIR POLLUTION	27

Contd.

CONTENTS, Contd.:

	Page
5.1 Encouraging cycling to schools, as a way to reduce urban traffic NOx pollution	27
5.2 Providing traffic separated cycle-ways for all towns and all large villages.. .. .	28
6. ROLE AND RESPONSIBILITY OF THE ENVIRONMENTAL PROTECTION AGENCY	38
6.1 General Role of the Environmental Protection Agency ..	36
6.2 Immunity of the Environmental Protection Agency from Prosecution	39
7. THE RIGHT TO AN ENVIRONMENT CONSISTENT WITH HUMAN DIGNITY AND WELL-BEING	40

FIGURES AND ILLUSTRATIONS

	Page
Figure 4.1 Air pollution “spikes” at Mungret, Limerick on 21 March 2019	25
Figure 4.2 Air pollution “spikes” at Mungret, Limerick in November 2019	26
Example of a badly designed cycleway and road crossing	31
Global carbon emissions and the pathway recommended by the IPCC to net-zero emissions by 2055	34
An example of a cargo bike used to carry children to school	35
The American “ELF” solar panel powered and pedal operated bike/car	36
The Australian “Rotovelo” single person, rain protected recumbent bike	36
Infographic of China showing the levels of air pollution before the pandemic (on the left), and the huge reduction of NO2 during the travel lockdown (on the right)	37

Contd.

APPENDICES

- Appendix I** Letter from Ollan Herr to Louth County Councillors on Clanbrassil Street re-development, dated 25 March 2018
- Appendix II** Invitation by the Department of the Environment, Climate and Communications (DECC) to participate in a Public Consultation on the National Air Pollution Control Programme (NAPCP), published on 9 December 2020.
- Appendix III** Email acknowledgement from the Air Quality Team of the Department of the Environment, Climate and Communications, confirming receipt of the submission by Zero Waste Alliance Ireland in response to the public consultation on the National Air Pollution Control Programme (NAPCP).

ZERO WASTE ALLIANCE IRELAND

Advocating Sustainable Resource Management and the Circular Economy

Submission to the Department of Environment, Climate and Communications on the National Air Pollution Control Programme

22 January 2021

1. INTRODUCTION

On 09 December 2020, the Department of the Environment, Climate and Communications (DECC) initiated a public consultation on the National Air Pollution Control Programme (NAPCP), which the Department is currently updating. A report on the NAPCP which accompanied the notice of the public consultation is dated 08 December 2020, and is subtitled an “*Update of the 2019 NAPCP*”. It therefore appears to be the Department’s intention to further update the NAPCP sometime during this year, 2021.

The National Emissions Ceilings Directive (NEC Directive 2016/2284/EU), which entered into force on 31 December 2016, establishes emission ceilings for 2020 and 2030 for five specified pollutants: nitrogen oxides (NO_x), non-methane volatile organic compounds (NMVOCs), sulphur dioxide (SO₂), ammonia (NH₃) and fine particulate matter (PM_{2.5}).

The 2016 NEC Directive transposes the reduction commitments for 2020 agreed by the EU and its Member States under the 2012 revised Gothenburg Protocol under the Convention on Long-range Transboundary Air Pollution (CLRTAP Convention). It ensured that the emission ceilings for 2010 set in the earlier directive (Directive 2001/81/EC) remained applicable for Member States until the end of 2019; but ensured that the more ambitious reduction commitments agreed for 2030 are enforced. These new commitments are designed to reduce the health impacts of air pollution by half compared with 2005. The 2016 NEC Directive also mandates the development of a National Air Pollution Control Programme (NAPCP) for each Member State.¹

¹ National Emissions Ceilings Directive; <https://www.eea.europa.eu/themes/air/air-pollution-sources-1/national-emission-ceilings>

The National Air Pollution Control Programme (NAPCP) describes the pathway Ireland should follow in order to achieve compliance with the country's commitments under the NEC Directive; and the format of the NAPCP is prescribed by the European Commission implementing decision (EU) 2018/1522, which was adopted on 11 October 2018.

The National Air Pollution Control Programme includes:

- An overview of sectors and national policy frameworks in Ireland that impact on emissions of the five NEC pollutants;
- An overview of the current outlook for compliance with NEC targets for each pollutant;
- Projections of relevant pollutant emissions to 2030; and,
- Policy options, measures and actions across sectors but in particular in the residential, transport agricultural and energy sectors aimed at reducing emissions of the five specified air pollutants.

As we have noted at the beginning of our introduction, the Department is inviting stakeholders to submit their views on the draft NAPCP and any additional analysis or evidence that could be considered. The Department has further stated that the results of this consultation process will be included in the final NAPCP; and the Department will include a summary of the results of the consultation with an emphasis on the selection of measures to combat air pollution, together with a consideration of the most suitable instruments and actions to implement the selected measures.

Zero Waste Alliance Ireland (ZWAI) is pleased to have the opportunity to make a submission on the updating and preparation of a new and revised National Air Pollution Control Programme. Over the past two decades, ZWAI has expressed concern about ambient air quality in Ireland; we have made submissions to An Bord Pleanála and the Environmental Protection Agency on the need for greater control over emissions to atmosphere, and we have pointed out that granting consent for additional emissions of particulates and volatile organic carbon compounds is in direct conflict with the principles and the requirements of the Stockholm Convention.

ZWAI has also expressed concern and made submissions to the competent authorities named above on the need for much improved air quality monitoring and enforcement of emission limits, and for greater understanding of the effects of substandard air quality on public health; and we have strongly advocated that planning and licensing decisions and the conditions attached to these decisions should take account of the impact of permitted emissions on public health. It has been our regrettable experience that the relevant competent authorities have not taken public health issues into account at a sufficiently detailed and local level; while other agencies (such as the Health Service Executive) appear to have neither the competence nor the necessary personnel and facilities to carry out monitoring of the effects of air quality on public health.

In our submission which follows, we hope to address some of these issues; but, before we do so, we will provide some relevant and necessary background information about Zero Waste Alliance Ireland, our aims, objectives, policies and recent work.

2. ZERO WASTE ALLIANCE IRELAND

2.1 Origin and Early Activities of ZWAI

Zero Waste Alliance Ireland (ZWAI), established in 1999, is a Non-Government Environmental Organisation (eNGO). ZWAI has prepared and submitted to the Irish Government and to State Agencies many policy documents on waste management, and continues to lobby Government on the issue of using resources more sustainably, and on the implementation of the Circular Economy.

Our principal objectives are:

- i) sharing information, ideas and contacts,
- ii) finding and recommending environmentally sustainable and practical solutions for domestic, municipal, industrial and agricultural waste management in Ireland;
- iii) lobbying Government and local authorities to implement environmentally sustainable waste management practices, including clean production, elimination of toxic substances from products, re-use, recycling, segregation of discarded materials at source, and other beneficial practices;
- iv) lobbying Government to follow the best international practice (for example, the policies and practices of countries, regions and cities which have adopted Zero Waste) and EU recommendations by introducing fiscal and economic measures designed to penalise the manufacturers of products which cannot be re-used, recycled or composted at the end of their useful lives, and to financially support companies making products which can be re-used, recycled or are made from recycled materials;
- v) raising public awareness about the long-term damaging human and animal health and economic consequences of landfilling and of the destruction of potentially recyclable materials by incineration and burning in cement manufacturing plants; and,
- vi) maintaining contact and exchanging information with similar national networks in other countries, and with international zero waste organisations.

2.2 Our Basic Principles

One of the most basic principles which informs our policies and strategies is that human communities must behave like natural ones, living comfortably within the natural flow of energy from the sun and plants, producing no wastes which cannot be recycled back into the earth's systems, and guided by new economic values which are in harmony with personal and ecological values.

In nature, the waste products of every living organism serve as raw materials to be transformed by other living creatures, or benefit the planet in other ways. Instead of organising systems that efficiently dispose of or recycle our waste, we need to design systems of production that have little or no waste to begin with.

There are no technical barriers to achieving a “*zero waste society*” and a truly “*Circular Economy*”; only our habits, our greed as a society, and the current economic structures and policies which have led to the present environmental, social and economic difficulties, and to the current climate and biodiversity crises.

“*Zero Waste*” is a realistic whole-system approach to addressing the problem of society's unsustainable resource flows – it encompasses waste elimination at source through product design and producer responsibility, together with waste reduction strategies further down the supply chain, such as cleaner production, product repairing, dismantling, recycling, re-use and composting.

ZWAI strongly believes that Ireland should have a policy of not sending to other countries our discarded materials for further treatment or recycling, particularly to developing countries where local populations are being exposed to dioxins and other very toxic persistent organic pollutants (POPs). Relying on other countries' infrastructure to achieve our “recycling” targets is not acceptable from a global ecological and societal perspective. Relying on the next generation to clean up and remove from the environment millions of tonnes of discarded materials, the production of which has contributed to global warming and to the biodiversity and climate crises, is neither environmentally sustainable nor ethically acceptable.

2.3 Our Continuing Work and Activities

Zero Waste Alliance Ireland has prepared many policy documents on waste management and related matters, we continue to lobby Government on the issue of sustainable resource and materials management, and to express our concern at the failure to address Ireland's “waste” problems at a fundamental level.

In recent decades, as many older landfills in Ireland were closed or became better managed (primarily as a consequence of the implementation of European Directives, Irish legislation transposing these Directives, the development of a waste licensing regime by the Environmental Protection Agency, and the establishment of the Office of Environmental Enforcement in 2003), concern about the adverse environmental and public health effects of landfills decreased considerably. ZWAI therefore concentrated more on the objectives of ensuring

that Ireland's government agencies, local authorities and other organisations will develop and implement environmentally sustainable resources and waste management policies, especially resource efficiency, waste reduction and elimination, avoidance of any form of mass burning or incineration, the promotion of re-use, repair and recycling, and the development and implementation of the **Circular Economy**.

As an environmental NGO, and a not-for-profit company with charitable status since 2005, ZWAI also campaigns for the implementation of the **UN Sustainable Development Goals**, including (but not limited to) Goal 3, Good Health; Goal 12, Responsible Consumption & Production; and Goal 6, Clean Water and Sanitation (having particular regard to the need to avoid wasting water).

Zero Waste Alliance Ireland has made the following submissions in response to public consultations:

- a) in September 2011, to the Department of the Environment, Community and Local Government, on waste policy;
- b) in September 2012, to the Environmental Protection Agency, on the Agency's draft National Implementation Plan (NIP) for the Stockholm Convention;
- c) in December 2013, to Dublin City Council Regional Waste Coordinator in response to a notice of intention to commence preparation of regional waste management plans;
- d) in January and February 2014, to the Department of the Environment, Community and Local Government, on proposals for the regulation of household waste collection and for dealing with used or end-of-life tyres (noting that the valuable resources which could be obtained from the recycling of end-of-life tyres are lost by burning the tyres in cement kilns and incinerators);
- e) in January 2015, to the Eastern & Midlands Regional Waste Coordinator, Dublin, on the Eastern and Midlands Draft Regional Waste Management Plan 2015 – 2021;
- f) in March 2015, to the Environmental Protection Agency in response to the Agency's public consultation on the National Inspection Plan 2015-2017 for Domestic Wastewater Treatment Systems;
- g) in April 2015, to Irish Water, on the Draft Water Services Strategic Plan;
- h) in February 2016, a submission proposing significant amendments to the Building Regulations;
- i) in March 2016, to An Bord Pleanála, detailed observations on a planning application by Indaver Ireland Ltd for a proposed incinerator at Ringaskiddy, County Cork;
- j) during 2016, undertaking a research project on the Circular Economy;

- k) in October 2017, to An Bord Pleanála, observations in response to a planning application by Irish Cement Ltd for permission to burn or utilise a greatly increased annual tonnage of non-hazardous and hazardous wastes as alternative fuels and raw materials in the company's cement production plant at Platin, County Meath;
- l) in April 2018, to the Department of Planning, Housing and Local Government, giving our observations on the Department's draft Water Services Policy statement, advocating the separation of nutrients such as N, P and K from wastewater, and urging that wastewater treatment should have as one of its principal aims the recovery and recycling of water and nutrients;
- m) in March 2019, to the Environmental Protection Agency in response to the Agency's public consultation on the draft Code of Practice for Wastewater Treatment and Disposal Systems Serving Single Houses;
- n) in December 2019, to the Department of Planning, Housing and Local Government, in response to the Department's public consultation on new environmental levies;
- o) in February 2020, to the Department of Communication, Climate Action and Environment on a proposed new waste action plan for a Circular Economy;
- p) in August 2020, to the Department of Housing Planning and Local Government in response to a public consultation on Significant Water Management Issues in Ireland;
- q) in October 2020, a submission to the European Commission's public consultation on the proposed revision of the Regulation on the European Pollutant Release and Transfer Register (E-PRTR); and,
- r) in November 2020, to the Department of Environment, Climate and Communications, in response to a public consultation on the proposed introduction of a deposit & return scheme (DRS) for beverage containers.

In addition to our responses to these public consultations, members of ZWAI have given presentations on:

- i) *"How the European Union has addressed the problem of plastic waste"* (at a conference organised by the European Union Office to Hong Kong and Macao, and the Business Environment Council of Hong Kong, in March 2019);
- ii) *"Single-use plastic packaging by the food industry – drivers and solutions"* (at a conference organised by the Food Safety Authority of Ireland, Dublin, November 2019); and,
- iii) Annual presentations to the Sustainability Summit and the Construction Industry, Dublin, on waste-related issues, including the Circular Economy, the relationship between waste and climate change, and *"How the*

Construction Industry can Survive in a World of Zero Waste and Climate Change”.

It will be clear that ZWAI is primarily concerned with the very serious issue of discarded materials and goods, whether from domestic, commercial or industrial sources, how these become “waste”, and how such “waste” may be prevented by re-design along ecological principles. These same ecological principles can be applied to the many ways in which we extract raw materials from the Earth, transform these materials into usable products, and then re-use, repair or recycle instead of disposing of them as “waste”.

Destruction of potentially recyclable materials by mass burning, incineration or as an additional fuel in cement production plants, with or without some energy recovery, we consider to be completely incompatible with Zero Waste, with the Circular Economy, and with Irish, EU and global policies and measures to mitigate climate change.

ZWAI is represented on the Government’s Waste Forum and Water Forum (An Fóram Uisce), is a member of the Irish Environmental Network and the Environmental Pillar, and is funded by the Department of Environment, Climate and Communications (and previously by the Department of the Environment, Community and Local Government) through the **Irish Environmental Network**.

In 2019 ZWAI became a full member of the **European Environment Bureau** (EEB); and we continue to participate (as far as our resources will allow) in the development of European Union policy on waste and the Circular Economy.

ZWAI continues to maintain working relationships with Zero Waste Scotland, with the Grass Roots Recycling Network in the United States, with the Global Anti-Incinerator Alliance (Global Alliance for Incinerator Alternatives -- GAIA), and other similar international environmental organisations.

Other ZWAI activities include an active web page (<http://zerowasteireland.com/>), a Twitter account (<https://twitter.com/zerowaster>), a much-visited Facebook page (<https://www.facebook.com/ZeroWasteAllianceIreland/>), and a Linked-In page (<https://www.linkedin.com/company/zero-waste-alliance-ireland/>) for the purpose of raising public awareness of the Zero Waste approach, providing Zero Waste news and activities, and reaching out to supporters and members of the public.

ZWAI is involved in three pilot-scale projects: (i) conversion of discarded food items (“food waste”) into a usable compost for horticultural use; (ii) recycling of used metallised plastic film crisp packets (in association with Terracycle); and (iii) recovery of phosphorus from wastewater, and using it for plant growth.

3. AIR POLLUTION AND HUMAN HEALTH

3.1 Air Pollution as a Globally Significant Cause of Adverse Human Health

The impact of air pollution on human health has attracted significant research activity, monitoring and policy statements during recent years, including the first global conference on air pollution and health, organised by the World health organisation (WHO), and held in Geneva from 30 October to 01 November 2018.²

The conference was organised in response to a World Health Assembly mandate to combat one of the world's most significant causes of premature death, causing some 7 million deaths annually. Approximately 30% of deaths from stroke, lung cancer and heart disease are due to air pollution; air pollution in most cities exceeds the recommended WHO Air Quality levels, and household air pollution is a leading killer in poor rural and urban homes.

According to the WHO, affordable strategies exist to reduce key pollution emissions from the transport, energy, agriculture, waste and housing sectors; while health-conscious strategies can reduce climate change and support the UN Sustainable Development Goals for health, energy and cities.

Pollution, including air pollution, is considered to be the one of the principal environmental risks to human health in the world.³ Even in relatively wealthy Europe, exposure to air pollution was responsible for an estimate of more than 410,000 early deaths in 2016 alone.⁴

A WHO report on air pollution and child health⁵, launched immediately before the first Global Conference on Air Pollution and Health mentioned above, shows that children are particularly at risk. When pregnant women are exposed to polluted air, they are more likely to give birth prematurely, and have small, low birth-weight children. Air pollution also impacts neurodevelopment and cognitive ability and can trigger asthma and childhood cancer. Children who have been exposed to high levels of air pollution may be at greater risk for chronic diseases such as cardiovascular disease later in life.

On 11 September 2018, the European Commission issued a press release which stated that:

² <http://www.who.int/news-room/events/detail/2018/10/30/default-calendar/who-s-first-global-conference-on-air-pollution-and-health>

³ Philip Landrigan and others, '*Lancet Commission on Pollution and Health*' (2018) 391 (10119); *Lancet* P462-512.

⁴ European Environment Agency, *Air Quality in Europe* (Report No 10/2019 2019).

⁵ Air pollution and child health: prescribing clean air; WHO Report, Advance copy, 24-Oct-18; 167 pp (final version still in process). <http://www.who.int/news-room/detail/29-10-2018-more-than-90-of-the-world%E2%80%99s-children-breathe-toxic-air-every-day>

“EU action to protect human health from air pollution has not delivered its expected impact, according to a new report from the European Court of Auditors. Every year, air pollution causes about 400,000 premature deaths in the EU and hundreds of billions of euros in health-related external costs. However, these significant human and economic costs have not yet been reflected in adequate action across the Union, warn the auditors. They add that particulate matter, nitrogen dioxide and ground level ozone are the air pollutants responsible for most of the early deaths and that people in urban areas are particularly exposed.”

Furthermore, the Covid-19 pandemic, caused by the emergence of a new strain of corona-virus (SARS-Cov-2), has focussed attention on the relationship between poor air quality and Covid-19 mortalities.

Research undertaken in 2020 has shown that air pollution is linked to significantly higher rates of death in people with Covid-19.⁶ The statistically significant and robust research results showed that even a tiny, single-unit increase in particulate concentrations in urban air in the years before the pandemic is associated with a 15% increase in the death rate. The research calculated that slightly cleaner air in Manhattan in previous years could have saved hundreds of lives.

Yet this research was not entirely new – as earlier research had showed that air pollution exposure dramatically increased the risk of death from the SARS coronavirus during the 2003 outbreak.⁷

We have indicated in these introductory paragraphs that there is a strong correlation between air pollution and human health; and it is a matter of serious concern that this issue is mentioned only in very general terms in the draft NAPCP report issued by the Department of the Environment, Climate and Communications (DECC) last December.

In section 3.1, the report states that *“Ireland recognises the significance of clean air to the health and well-being of its citizens and its environment and is well aware of its international obligations in this area under European and UNECE frameworks”*.

In section 3.2.1, the report states that *“a clear recognition of the importance of maintaining high standards for ambient air quality, such that the corresponding*

⁶ Xiao Wu, Rachel C. Nethery, M. Benjamin Sabath, Danielle Braun, and Francesca Dominici; 2020. Exposure to air pollution and COVID-19 mortality in the United States (Updated April 5, 2020). All authors are part of the Department of Biostatistics, Harvard T.H. Chan School of Public Health, Boston, MA, 02115, USA. Lead authors: Xiao Wu and Rachel C. Nethery. Corresponding and senior author: Francesca Dominici.

⁷ Yan Cui, Zuo-Feng Zhang, John Froines, Jinkou Zhao, Hua Wang, Shun-Zhang Yu and Roger Detels; 2003. Air pollution and case fatality of SARS in the People's Republic of China: an ecologic study. Environmental Health: A Global Access Science Source; 2:15, 20 November 2003.

impacts on human health are reduced”, is central to the Government’s “Clean Air Strategy”; but this strategy will not be published until early 2021.

In section 3.2.1, the report states that “*measures supported and implemented in Ireland to reduce emissions from road transport have been designed to control overall transport emissions, reduce congestion, promote fuel efficiency, and in doing so promote health and well-being*” – making it clear that human health is secondary to reducing congestion on the roads and promoting fuel efficiency.

Other brief references to human health appear on pages 35, 36, 37, 39, 51, and 69; but these do not negate our conclusion that human health is inadequately addressed in the draft NAPCP report.

It is our submission that the draft NAPCP does not place sufficient emphasis on the urgent need to consider human health as one of the principal reasons for reducing air pollution and improving air quality; and the programme is very weak on the urgent need to establish a greatly improved monitoring network, and to identify at small-scale local level a statistically robust relationship between air quality and human health and well-being, as measured by public health data.

3.2 Adverse Health Effects of Micro-particulates Emitted to the Atmosphere

Air pollution from industrial and automotive sources (including electric power generation facilities and the growing numbers of motor vehicles powered by internal combustion engines) has been identified as a significant cause of both acute and chronic health problems, especially in cities where large numbers of people are exposed to excessive levels of contaminants such as micro- and nano-particulates, nitrogen oxides, polyaromatic hydrocarbons (PAHs), and other potentially toxic substances.

Attributing cause to effect is not always easy or possible, despite the use of the well-known “source-pathway-receptor” concept which links industrial emissions with poor air quality and adverse health effects in nearby populations in a number of locations in Europe and world-wide.

In Ireland, several factors contribute to the difficulty of addressing these air pollution problems – these include the absence of health statistics at a sufficiently precise or small area level, the reluctance of government agencies to take seriously the problem of public health attributable to environmental causes, and lobbying by industry to create the impression that such problems do not exist, or are due to other causes.

Air pollution modelling carried out by industrial installations in support of planning applications and industrial emissions licences in Ireland has failed to demonstrate with any degree of reliability that particulate and other emissions from existing and proposed combustion sources, especially when the burning of “waste” materials takes place or is proposed, will not cause existing adverse effects from

emissions to become more serious, i.e., to intensify or become more frequent or widespread.

The type of particulate matter (PM) of less than 10 and 2.5 microns in diameter (PM₁₀ and PM_{2.5}) emitted by a variety of sources, including vehicular emissions, solid fuel burning, and mass burning of waste, is capable of penetrating deep into lung passageways and entering the bloodstream, causing cardiovascular, cerebrovascular and respiratory impacts; and is a significant health risk, especially to children, as emphasised by the World Health Organisation.

The WHO report on air pollution and child health mentioned in section 3.1 above showed that children are particularly at risk; but we also wish to draw the attention of the Department to a recent research report which indicates that inhaled particulates may be transferred across the human placenta. Professor Tim Nawrot, of Hasselt University in Belgium, and his colleagues used high-resolution imaging to detect black carbon particles in placentae.⁸ They found that some ten mothers who had been exposed to high levels of residential black carbon particles – 2.42 micrograms per cubic metre of air – during pregnancy had higher levels of particles in the placenta than 10 mothers exposed to low levels of residential black carbon – 0.63 micrograms per cubic metre.

Their results demonstrated that the human placental barrier is not impenetrable for carbon particles, and even though the particles examined in this study are different from the PM₁₀ and PM_{2.5} particles emitted by vehicular and other sources in Ireland, this research indicates the existence of a serious public health risk which should not be allowed to continue.

In section 5.1.5 (page 51), the NAPCP report states that:

“PM_{2.5} is projected to stay in compliance with NECD ceilings for all periods out to 2030 and beyond under the WM scenario outlook. Although compliant on the basis of the current outlook, PM_{2.5} is the key driver of health impacts from air pollution and further ambition and progress is planned on the basis that there are no ‘safe’ levels of air pollution from a health perspective. Measures in the CAP, NECP and CAS are expected to deliver additional progress on PM_{2.5} emission reductions. These additional measures include a substantial increase in the penetration of heat pump technologies and fabric retrofit in the residential sector”.

ZWAI welcomes the statements that “PM_{2.5} is the key driver of health impacts from air pollution” and that “there are no ‘safe’ levels of air pollution from a health perspective”. However, it clear from the report that the principal sources to be addressed are domestic heating systems (for example, by replacing solid fuel use) and road transport (in section 4.2.1); and there is no mention of emissions

⁸ Bové, H., Bongaerts, E., Slenders, E. et al. Ambient black carbon particles reach the fetal side of human placenta. *Nat Commun* 10, 3866 (2019). <https://doi.org/10.1038/s41467-019-11654-3>. Reported in the Irish Times “Unborn babies exposed to black carbon from air pollution – study”; Irish Times, Tue, Sep 17, 2019.

of PM_{2.5} from large industrial plants. For these sources, the Industrial Emissions Directive, overseen by the EPA, is considered in the report to provide adequate protection of the health of people living in the neighbourhood of combustion plants (section 3.3.4, page 23).

Furthermore, it is inadequate and a failure of pollution control that operators of existing medium size combustion plants will not be required to meet specified emission limit values (ELVs) until 2025 at the earliest. The report states that *“this will assist in limiting the impact on human health, vegetation and biodiversity which can be caused by air pollution”* (section 3.3.5, page 23) – but how such a statement can be justified is almost unbelievable, given the existing public health problems being caused by a number of large-scale industrial plants (primarily cement production plants) in Ireland.

In section 7.1.5 (page 68), the NAPCP report states that outlook for PM_{2.5} *“is encouraging and shows a steady abatement trajectory out to 2030”*. The report adds that *“Ultimately whilst efforts to identify and address ‘hot spots’ of fine particulates will continue into the future for this key pollutant, on an aggregate national scale the expected progress under the NECD is encouraging”*.

While the overview expressed in that statement may be *“encouraging”*, it is our experience that the “hot spots” are serious, and particularly so for people living in and around them. Four members of ZWAI live and work in Limerick City, where the presence of a large-scale cement manufacturing plant which first began operation in 1938 has resulted in elevated levels of both micro-particulates and visible dust in the atmosphere. Other “hot spots” exist in the area around an incinerator and cement production plant in County Meath, as the proximity of these industries causes a combined effect on air quality.

The City of Limerick, and particularly the Mungret area, has higher than normal levels of asthma and other pulmonary disorders, and there is growing (though circumstantial) evidence that the adverse health effects can be attributed to emissions from the cement manufacturing plant at Mungret.

The lack of public health data which would make it possible to assess the current impact of the cement plant, and which would be necessary for an evidence-based health impact assessment of the proposed co-fuelling of the cement plant with alternative combustible materials, is a matter of serious concern.

It is our submission that the NAPCP should specifically state that the competent authorities which grant consents for such plants, and which have the responsibility to attach conditions to these consents, and (in the case of the EPA) have the responsibility of monitoring atmospheric emissions from them, should withhold consent until it can be shown conclusively, based on scientific and epidemiological evidence, that current emissions are not causing harm to the population, and that future emissions will not cause harm.

3.3 Adverse Health Effects of Heavy Metals and Dioxins Emitted to the Atmosphere

The quality of the air is deteriorating fast in Ireland, especially around cities where car emissions and industrial emissions are responsible for a number of pollutants.

The most toxic emissions are heavy metals⁹ and dioxins.

Heavy metals are naturally occurring elements that have a high atomic weight and a density at least 5 times greater than that of water. Their multiple industrial, domestic, agricultural, medical and technological applications have led to their wide distribution in the environment; raising concerns over their potential effects on human health and the environment. Their toxicity depends on several factors including the dose, route of exposure, and chemical species, as well as the age, gender, genetics, and nutritional status of exposed individuals.

Because of their high degree of toxicity, arsenic, cadmium, chromium, lead, and mercury rank among the priority metals that are of public health significance. These metallic elements are considered systemic toxicants that are known to induce multiple organ damage, even at lower levels of exposure. They are also classified as human carcinogens (known or probable) according to the U.S. Environmental Protection Agency, and the International Agency for Research on Cancer.

According to the WHO¹⁰:

- Dioxins are a group of chemically-related compounds that are persistent environmental pollutants (POPs);
- Dioxins are found throughout the world in the environment and they accumulate in the food chain, mainly in the fatty tissue of animals;
- More than 90% of human exposure is through food, mainly meat and dairy products, fish and shellfish; many national authorities have programmes in place to monitor the food supply;
- Dioxins are highly toxic and can cause reproductive and developmental problems, damage the immune system, interfere with hormones and also cause cancer;
- Due to the omnipresence of dioxins, all people have background exposure, which is not expected to affect human health. However, due

⁹ Tchounwou, P. B., Yedjou, C. G., Patlolla, A. K., & Sutton, D. J. (2012). Heavy metal toxicity and the environment. *Experientia supplementum* (2012), 101, 133–164. https://doi.org/10.1007/978-3-7643-8340-4_6.

¹⁰ Dioxins and their effects on human health. World Health Organisation Fact sheet, 04 October 2016. <https://www.who.int/news-room/fact-sheets/detail/dioxins-and-their-effects-on-human-health>

to the highly toxic potential, efforts need to be undertaken to reduce current background exposure; and,

- Prevention or reduction of human exposure is best done via source-directed measures, i.e. strict control of industrial processes to reduce formation of dioxins.

3.3.1 Heavy metals in PM_{2.5}

A recent review¹¹ analyses the temporal and spatial trends in the distributions of As, Cd, Cr, Cu, Ni, Pb, Zn, and Hg in MSW incineration fly ash between 2003 and 2017, and estimates the inventories of heavy metals associated with the fly ash and the average levels of heavy metals in Chinese MSW based on their mass flow during MSW incineration. It was estimated that MSW incinerators in China released approximately 1.12×10^2 , 2.96×10^3 , 1.82×10^2 , 3.64×10^4 , 1.00×10^2 , 7.32×10^3 , 2.42×10^2 , and 1.47×10^1 tonnes of Cd, Pb, Cr, Zn, Ni, Cu, As, and Hg, respectively, with the fly ash in 2016.

In a hazardous waste incinerator, most of Cu, Cr, As, and Zn remain in bottom slag, and most Pb remains in fly ash, for the reason that Hg, Cd, As, Pb, and Zn transfer into fly ash mainly by evaporation and condensation; while Se and Cr transfer into fly ash mainly by entrainment. A high chlorine content favours the evaporation of Cu, Pb, and Zn. The leachability of heavy metals in the bag filter ash is the highest.¹²

3.3.2 Dioxins and the Food Chain

To clarify the dominant formation mechanism of polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/Fs) and reduce PCDD/F emissions in full-scale hazardous waste incinerators (HWIs), three tests were designed by adding different PCDD/F precursors in phenol-containing raw material. Flue gas from three stages of the incineration facility, as well as bottom ash and fly ash were collected to investigate formation pathways, emission characteristics and mass balance of PCDD/Fs.

The results showed that in tests A and C, the PCDD/F emission levels were 0.02 and 0.83 ng I-TEQ Nm⁻³, with adding naphthalene and p-dichlorobenzene, respectively. Test B, the control group, only incinerated raw materials, resulting in 0.72 ng I-TEQ Nm⁻³ PCDD/F emissions. PCDD/F formation mechanism analysis suggested that high-temperature radical-molecule reaction was the

¹¹ Ping Wang, Yuanan Hu, & Hefa Cheng (2019). Municipal solid waste (MSW) incineration fly ash as an important source of heavy metal pollution in China. *Environmental Pollution*, Volume **252**, Part A, 2019, Pages 461-475. ISSN 0269-7491. <https://doi.org/10.1016/j.envpol.2019.04.082>. (<http://www.sciencedirect.com/science/article/pii/S0269749119305007>)

¹² Wenhan Li, Zengyi Ma, Qunxing Huang & Xuguang Jiang (2018). Distribution and leaching characteristics of heavy metals in a hazardous waste incinerator. *Fuel*, Volume **233**, 01 Dec. 2018, Pages 427-441. ISSN 0016-2361. <https://doi.org/10.1016/j.fuel.2018.06.041>. (<http://www.sciencedirect.com/science/article/pii/S0016236118310615>)

dominate pathway in test A, while for test B, memory effect in the air pollution control devices (APCDs) led to high PCDD/F emissions.

With the addition of p-dichlorobenzene in test C, PCDD/F levels at the quenching tower outlet were one order of magnitude higher than those observed at the inlet, indicating that the quenching tower failed to suppress the formation of PCDD/Fs. The PCDD/PCDF ratios indicate that with the abundance of PCDD/F precursors, surface-mediated precursor reaction is the dominant formation mechanism in low-temperature stages. These findings raise the following strategies for industry to control PCDD/F emissions: (1) strict regulation of the organochlorine content in feed material; (2) frequent and thorough cleaning the APCDs; and (3) optimizing the injection rate of activated carbon.¹³

3.3.3 Conclusions

- There are serious toxic emissions to the atmosphere, from many locations;
- Heavy metals are water soluble and they can cross-contaminate the water and the sea and hence milk and marine organisms;
- Dioxins are fat soluble and they can cross-contaminate all fat containing foods, namely milk and dairy products; and,

3.4 An Example of an Industry's Failure to Model Atmospheric Emissions and their Human Health Effects Through the Food Chain

In section 3.2 above, we mentioned that four members of ZWAI live and work in Limerick City, where the presence of a large-scale cement manufacturing plant is continuing to cause concern. In October 2019, a local group with which ZWAI is associated submitted to the EPA a detailed critique of the modelling exercise presented by Irish Cement Limited. This analysis and critique was prepared by environmental professionals, and we are including it here as a relevant example of how a significant industry can fail to provide reliable information in support of an Industrial Emissions Licence.

One of the most disturbing aspects of the application by Irish Cement Limited, and an issue of significant concern to ZWAI members and local residents, is the way in which the applicant attempted to model the dispersion of emissions from the cement plant, and particularly how the modelling software was used to

¹³ Chen Wang, Jiyun Xu, Zhenzhou Yang, Zuotai Zhang & Zongwei Cai (2019). A field study of polychlorinated dibenzo-p-dioxins and dibenzofurans formation mechanism in a hazardous waste incinerator: emission reduction strategies. *Journal of Cleaner Production*, Volume **232**, 2019, Pages 1018-1027. ISSN 0959-6526. <https://doi.org/10.1016/j.jclepro.2019.06.020>. (<http://www.sciencedirect.com/science/article/pii/S0959652619319560>)

“predict” the intake of dioxins and other contaminants by those residents who would be most at risk.

Detailed evidence on this risk assessment, presented by Dr Gordon Reid during the oral hearing held by An Bord Pleanála, and which we repeat here for the benefit of the Air Quality Division of the Department, made the following points:

- i) the applicant’s risk assessment lacked the essential information (input data, modeling equations and calculations) which would allow the assumptions and conclusions in the applicant’s human health risk assessment to be independently reviewed or verified, so that it was impossible to confirm that the HHRAP had been applied correctly;
- ii) it calculated only the *increment* of dioxin and furan intake by humans living near the plant resulting from the use of alternative fuels, and compared this with the *total* EU “tolerable daily intake” (TDI). This approach is not valid. The already existing “baseline” intake (calculated from soil samples at the site) needs to be included, and the increment added to this, so that the predicted *total* intake is compared with the TDI;
- iii) using soil samples taken from the ICL site, it is possible to calculate the expected intake based on an analysis carried out by a different applicant at a different site (Ringaskiddy, County Cork). It should be noted that extrapolation from one site to another is unlikely to greatly distort the predicted intake, as it depends on aspects of plant, animal and human physiology that do not differ between Limerick and Cork. This analysis shows that predicted intakes based on existing levels of dioxins, furans and dioxin-like PCBs already greatly exceed the TDI, before adding the increment expected from the burning of alternative fuels;
- iv) even the most basic check on the validity of the HHRAP calculation – the ratio of ingested to inhaled intake – could not be calculated because the applicant’s risk assessment had set inhaled intake at zero;
- v) although the HHRAP method predicts the dioxin and furan contents of the foods assumed to be eaten by the “model human” whose risk is being assessed, and the software used by the applicant provides this information, the information was not given as part of the risk assessment. This made it impossible to verify the accuracy of the model prediction by comparison with real foods from the area (e.g. the EPA’s milk sampling). Even when requested to produce this information during the An Bord Pleanála oral hearing, the applicant did not do so;
- vi) no clear information was given about the diet of the theoretical receptors (farmer and resident), even though such information is available in the form of a National Nutritional Survey carried out by four Irish universities which provided the average consumption of 67 food groups and would give a reliable basis for the final stage of the intake modeling;

- vii) the risk assessment omitted the calculated intake of dioxin-like PCBs by residents living in the vicinity, even though this had been specifically requested by the Council;
- viii) the applicant company's omission of PCBs seriously undermined the conclusions of the risk assessment, given that the HHRAP recommends automatically including PCBs as Compounds of Potential Concern (COPCs) for combustors that burn highly variable waste streams such as municipal and commercial wastes (for which PCB contamination is a reasonable assumption)¹⁴; and this recommendation is based on an increasing body of information which supports the likelihood that PCBs may be emitted as by-products of combustion, regardless of the amount or level of PCB contamination in the combustor feed; and the fact that, in most cases, PCBs were found in the stack even when there were no PCBs in the combustor feed; and that, overall, PCB emissions exceeded dioxin and furan emissions by approximately a factor of 20, and this trend appeared to hold over five orders of magnitude in dioxin and furan emissions;
- ix) the omission of PCBs from the risk assessment further invalidates the assessment's conclusions for the reason that dioxin-like PCBs are ubiquitously present in the environment, and they contribute a very substantial fraction (43 % on average, in TEQ terms) of total dioxin-like toxicity in the Irish environment;
- x) the risk assessment omitted the consumption of fish in the dietary intake of residents living in the vicinity, and this is a serious omission, given that residents buy fish in their local shop or supermarket (even if the amount of fish caught locally is quite small), as a result of which they would be exposed to the prevailing levels of dioxin-like toxicity in Irish retail fish, especially farmed salmon; and,
- xi) the omission of fish from the calculated risk assessment is all the more surprising, given that, in the average Irish diet, fish-eating contributes an average of 39 % of the total intake of dioxin-like toxicity.

Dr Gordon Reid also commented on a health impact assessment presented by Irish Cement's consultant at an oral hearing held by An Bord Pleanála. He pointed out that in order for the applicant's consultant to adequately cover the topic, it would have been necessary to survey the entire literature on the human health effects of all the potentially hazardous substances expected to be released from the cement kiln which was the subject of the then current application, and to assess the likely effects of the concentrations expected to be found.

¹⁴ "Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities"; Office of Solid Waste and Emergency Response (5305W), US EPA; ref. EPA530-R-05-006, September 2005, available from www.epa.gov/osw

However, the literature review presented on behalf of the applicant company included only 15 articles; and Dr Reid's explanation for this surprisingly small scope was that the consultant appeared to confine himself exclusively to studies of cement kilns using alternative fuels. The "alternative fuels" used in the studies cited in the literature review are a limited set of substances, mostly tyres and sewage sludge.

In contrast, the list of substances encompassed by the term "alternative fuels" in the licence application by Irish Cement Ltd includes most of the waste categories expected to be found in a municipal waste incinerator. The substances expected to be found in emissions from "burning alternative fuels" can therefore best be predicted based on studies of waste incinerators, which operate under the same Industrial Emissions Directive as do cement kilns, but which have a waste input stream more comparable to that proposed in the application which Dr Reid was considering.

In the apparent absence of a sufficient number of research articles on the health effects of burning mixed municipal wastes in cement kilns, articles on the health effects of living close to municipal waste incinerators would have given valuable information on the likely health effects of burning mixed municipal wastes at a cement kiln. This would have greatly increased the number of articles that could have been included in the literature review.

In particular, at least three additional articles would be essential to include in the literature review, and would probably have been found if the search terms had not been so narrow, and if more appropriate search terms had been used; and these articles are:

- (i) Forastiere et al, "*Health impact assessment of waste management facilities in three European countries*", *Environmental Health* 10:53 (2011)

This is a large-scale health impact assessment based on 62 incinerators in three countries, all operating according to the emission limits imposed by the current EU Directive. It assessed levels of particulates (PM₁₀) and nitrogen dioxide around these incinerators, by modelling the distribution of their emissions using industry-standard methods. Using WHO statistics on correlation between levels of pollutants and premature death, the study assessed that in a population of about 2.2 million people, 18 cancers per year would occur as a result of pollution from the incinerators. A total of 7,624 years of life would be lost as a result of cancers and respiratory diseases resulting from incinerator emissions.

- (ii) Candela et al, "*Exposure to emissions from municipal solid waste incinerators and miscarriages: A multisite study of the MONITER Project*", *Environment International* 78:51-60 (2015)

This study calculates the exposure of a pregnant person to particulates (PM₁₀) from existing waste incinerators operating according to the latest

EU directive, based on the output from the incinerator and the location of the person relative to the incinerator. This is related to the incidence of miscarriage. The study showed that higher levels of PM₁₀ were associated with a higher risk of miscarriage.

- (iii) Candela et al, “*Air Pollution from Incinerators and Reproductive Outcomes: A Multisite Study*”, *Epidemiology*, 24:863-870 (2013)

This study uses the same method as the one above, to assess exposure to PM₁₀ from incinerators. It showed that higher levels of PM₁₀ were associated with a higher risk of preterm birth.

Dr Reid made the point in his detailed analysis that it is misleading to conclude that the use of alternative fuels is free of risk to human health, as the conclusion by the applicant company’s consultant was based on a limited set of only 15 articles studying a limited set of alternative fuels, and omitting the entire literature on the health effects of burning the very varied waste stream intended in the subject application. Given that the applicant’s proposal was to burn a full range of municipal waste, the relevant literature cited must encompass the health effects of burning mixed municipal waste, and the three articles mentioned above must be included in any health impact assessment.

The scientific papers cited above show that the burning of municipal waste, in facilities that operate under the same emissions limits as those imposed by the current EU Industrial Emissions Directive (mentioned in section 3.3.4 on page 23 of the NAPCP report, dated December 2020), is associated with increases in miscarriage and preterm birth, and in the incidence of cancer and respiratory disease that would be expected to be associated with over 7,600 years of life lost in a population of just over 2 million. This is not consistent with the NAPCP report’s claim of “*little or no published evidence of adverse outcomes*”.

3.4.1 An Application for an Industrial Emissions Licence Ignored the Existing Background Intake of Dioxins

The standard method for estimating dioxin intake, is the Human Health Risk Assessment Protocol of the US EPA (HHRAP for short). The HHRAP assumes “receptors” (i.e., people) living near the factory, either as “residents” (whose intake of dioxins is from non-local food plus vegetables grown on the site), or as “farmers” (who eat meat, milk and vegetables produced on the site). It is carried out in two stages:

- (i) To obtain a baseline intake, without the emissions from the factory, the soil concentrations of dioxins and furans from samples taken at the site is entered into a computed model which calculates the estimated human intake. This is compared with the EU’s recommended “tolerable daily intake” of 2 picograms per kilogram body weight per day.

- (ii) The additional intake due to the factory emissions is calculated by modelling the atmospheric dispersion of emissions from the factory and the deposition due to these emissions, which is added to the soil concentration already considered in (i) to obtain the estimated soil concentration with the factory in operation. This estimated soil concentration is fed in to the computer model described in (i), to obtain an estimated total intake with the proposed factory in operation.

In the report submitted with the company's application for an Industrial Emissions Licence, *step (i) above has not been carried out!* The "intake" reported is from the factory contribution only, as if there were no other sources of dioxins and furans. To compare this "intake" with the EU Tolerable Daily Intake (TDI) is absolutely meaningless. The TDI is a limit for an individual's *total* exposure, from *all* sources – not a limit to the contribution of a single source, such as the proposed use of alternative fuels at this factory. It is important not to confuse an emissions limit (what comes out of the factory) with an exposure limit (what the human body can tolerate). *The report* [prepared on behalf of the applicant] *does exactly that*, which is why it is dangerous.

3.4.2 The Intake of Dioxin-like PCBs has been Omitted.

The applicant's report considered only the human intake of dioxins and furans, while omitting that of dioxin-like PCBs. This omission betrays a lack of understanding of the physiological actions of dioxin-like PCBs, which act on the same cellular receptor (the aryl hydrocarbon receptor or AHR), and activate it in the same way. Their toxicity therefore adds to that of dioxins and furans. Human toxicity of these substances depends on the total level of activation of the AHR, and not on whether it is activated by dioxins, furans, or dioxin-like PCBs.

The manual for the Human Health Risk Assessment Protocol (HHRAP)¹⁵, the method used in the applicant's report, states clearly that dioxin-like PCBs *should* be included in the analysis:

*"Because of evidence that PCBs can be emitted from combustion sources regardless of feed characteristics, and considering the significant toxicity of PCBs, we ... recommend automatically including PCBs as COPCs (compounds of potential concern) for combustors that burn ... highly variable waste streams such as municipal and commercial wastes (for which PCB contamination is a reasonable assumption) ... An increasing body of information supports the likelihood that PCBs may be emitted as by-products of burning, regardless of PCB contamination in the combustor feed ... In most cases, PCBs were found in the stack even when there were no PCBs in the combustor feed. **Overall, PCB emissions exceeded dioxin and furan emissions by approximately a factor of***

¹⁵ Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities; EPA530-R-05-006, September 2005. Published by the U.S. Environmental Protection Agency, Office of Solid Waste.

20, and this trend appeared to hold over five orders of magnitude in dioxin and furan emissions.” (emphasis added by Dr Reid).

Furthermore, even if we were to imagine a hypothetical situation where a combustion process managed to generate no PCBs, it would still be essential to include them in the HHRAP analysis, because they are present in the general environment. So we are all taking in dioxin-like PCBs with everything we eat, in particular when fish, meat or dairy products are consumed.

Dr Gordon Reid showed in his report for the An Bord Pleanála oral hearing that, based on the EPA’s “Dioxin Report 2012”,¹⁶ on average 43 % of the dioxin-like toxicity contained in Irish milk samples is attributable to dioxin-like PCBs and only 57 % to dioxins and furans. This phenomenon is observed across all food sources, with quantitative variations. This means that the total intake of dioxin-like toxicity from milk is actually 75 % higher (i.e., 43/57) than an estimate based only on dioxins and furans.

The preceding paragraph refers to the *background* intake, i.e. human intake of dioxin-like toxicity without the additional contribution of the proposed cement plant burning alternative fuels. Based on the HHRAP’s research, the underestimation of dioxin-like toxicity in the additional intake due to the plant emissions will be even more serious than that of the background intake.

Taking these two factors together – the lack of consideration of the existing background intake of dioxins and related substances, and the lack of consideration of dioxin-like PCBs – the values that the applicant’s report comes up with for human intake of dioxin-like toxicity bear absolutely no relation to the real intake to which people near the plant would be exposed.

Dr Reid’s report concludes that the licence applicant’s report

“produces numbers that are smaller than the Tolerable Daily Intake of dioxin-like toxicity cannot, therefore, be taken as an indication that the proposed process is safe. It indicates only that too much was omitted from the calculation for the numbers to mean anything at all.”

The arguments submitted by Dr Reid show clearly that there is significant doubt and public concern about the public health effects of the applicant’s proposal to burn large quantities of waste in a plant which is designed and operated for cement production, and does not have the specialised flue gas cleaning which is normally installed in a municipal waste incinerator.

This concern has not been allayed by the statement in the EPA Inspector’s report that:

“The Plan states that PCDDs and PCDFs are destroyed at incinerator temperatures above 800°C for sufficient residence times. It states that the quantities of PCDD and PCDF emitted from commercial incinerators are

¹⁶ https://www.epa.ie/pubs/reports/other/dioxinresults/Dioxin%20Report%202013_web.pdf

*regarded as low compared to the total amounts released annually. Given the similarities and high combustion temperatures with co-incineration, the same conclusion can reasonably be applied in this instance”.*¹⁷

This statement is manifestly untrue, as the best practice used by incinerators for the removal of dioxins and furans from flue gases, and to prevent their re-formation, is to drench the gases with cold water containing lime which will react with any free chlorine, and the rapid fall in temperature will inhibit reformation. In the cement plant, the hot flue gases are used to heat the incoming raw materials before they are fed to the kiln, utilising heat transfer from the flue gases to the cooler raw material. The result is that the flue gases are cooled more slowly, and the gases therefore spend more time within the temperature range at which dioxins and furans are re-formed.

While it may appear reasonable to assume that the re-formed dioxins and furans will be adsorbed by the raw materials, and will be exposed to the high temperature in the kiln, such an assumption is based on all the operating parameters remaining constantly within specified limits. Any significant plant “upset” has the potential to generate and emit dioxins and furans, with no “fall back” or secondary containment. Given the nature of these substances, we can only conclude that the proposed burning of waste is a high risk activity from a human health environmental perspective.

3.4.3 Conclusions from this Section of our Submission

We have given a significant amount of detail in this section of our submission, as we consider that it provides a relevant example of a case study showing that an industrial applicant for a licence which would permit emissions to the atmosphere may not always provide accurate information; and, in some cases, may provide misleading information.

Therefore we submit that a much tighter regime of air pollution control of industrial emissions – both proposed emissions and existing emissions – should be included as a matter of policy in the final revised National Air Pollution Control Programme. The Environmental Protection Agency can operate only within the framework of Government policy; and, if that policy is weak, the Agency is unable (or less willing) to impose more stringent conditions on industrial emitters and subject them to more frequent and detailed monitoring.

¹⁷ The “Plan” to which the Inspector refers is “Ireland’s National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants (POPs)” which was updated by the Agency in 2018; and the comments by the EPA Inspector are on pages 10 and 30 of his 119-page report dated 04 September 2019, on the review of an Industrial Emissions Licence held by Irish Cement Ltd for the operation of the company’s cement production plant at Castlemungret, Limerick (EPA Register number P0029-06).

4. MONITORING OF AIR POLLUTION

In sections 3.3.1 and 3.3.2 (page 22), the NAPCP report states that:

“In late 2019, the European Commission carried out a fitness check of the Ambient Air Quality Directives. This entailed a retrospective analysis of whether EU actions are fit for purpose and to identify regulatory burdens, overlaps, gaps and inconsistencies. The analysis indicated that while the Directives are broadly fit for purpose, the Commission noted that there was scope for improvement in several areas such as the level of investment in monitoring networks and modelling capacity”.

The NAPCP report also states that the European Green Deal includes:

“a strengthening of provisions on monitoring, modelling and air quality plans to help local authorities achieve cleaner air; and a revision of air quality standards to align them more closely with the World Health Organization recommendations is also expected”.

While the proposed strengthening of monitoring, modelling and air quality plans is welcome (especially the question of modelling, given the example we have quoted at some length above); we certainly agree that there is considerable scope for improvement.

As mentioned earlier in this submission, Zero Waste Alliance Ireland includes in its membership a number of people living in Limerick City, and their experience is that monitoring of air quality in the city is seriously inadequate.

The World Health Organisation (WHO) provides guidelines for particulates in air as follows:

PM₁₀ Calendar year average 20 µg/m³

PM₁₀ 24 hour average 50 µg/m³

PM_{2.5} Calendar year average 10 µg/m³

PM_{2.5} 24 hour average 25 µg/m³

Unfortunately, it is a relatively easy task for industry to create, or allow, high exceedances to arise – to meet output targets, maintain process control or carry out maintenance – while avoiding breaches of the above listed WHO averages. Using daily and annual averages to mask high-risk emission spikes is an observable phenomenon at many EPA and local authority monitoring stations around the country. This use of averages will be familiar to anyone who has had to turn down the volume during the TV Commercial Break as advertisers get our attention loudly while adding sufficient “silences” to avoid breaching noise rules.

Deliberately exposing members of the public, or allowing members of the public to be exposed, to significant, short-duration (i.e., less than 24hr), exceedances of WHO guidelines should not be permitted. And it is also a failure of public health

policy and air pollution monitoring to allow asthmatic children and their parents in nearby schools, or our elders (currently exposed to pandemic risk) and our weakest citizens to be exposed to short duration particulate risk deliberately created by industrial polluters. We need a regime to capture spiky emissions data, identify recurring patterns and trigger investigation and prosecution. We also need rules on the magnitude of allowable spikes even when WHO and CAFE¹⁸ averages are not breached.

For example, the Limerick City and County Council (LCCC) Air Quality Report dated April 2019 acknowledges exceedances for PM₁₀ and PM_{2.5} on 09 April 2019. One of our ZWAI members downloaded the data from the LCCC site and identified two extensive spikes that day alone. The reported 77µg/m³ of PM₁₀ exceeds the CAFE ELV of 50 µg/m³ over 24hrs. We point out that the extent of these spikes was unusually long, and the peaks unusually high.

The first spike actually averaged 103 µg/m³ of PM₁₀ over an 8.5 hour period in the early morning of 09 April 2019 (02:45 to 09:15) and a peak of 166.3 µg/m³ at 04:50. A second spike averaged 107.65 µg/m³ of PM₁₀ over a 4hr:5min period that afternoon (12:30 to 16:35) and a peak of 133.8 µg/m³ at 14:20

Given the proximity of an industrial emission source to 6 local schools, to Mungret Park and to UCH and to its CF Unit, it is clear that the average values used for enforcement can easily be used to mask high risk episodes where children, COPD sufferers and older adults are endangered. In this one example, there were 12 hours and 30 minutes of high levels of PM₁₀ (at least double the allowable ELV) while kids were being dropped off and collected at school, were in the playground or were using Mungret Park.

In Figures 4.1 and 4.2 below, we illustrate some “spikes” in the concentrations of air pollutants in Mungret, Limerick, in March and November 2019.

¹⁸ The Clean Air For Europe programme (CAFE) was established to support the European Commission’s development of a Thematic Strategy on air pollution, the Directive on Ambient Air Quality and Cleaner Air for Europe and its Impact Assessment; COM(2001) 245 final; Brussels, 04.05.2001



Updated: 19:00, 21-Mar

Mungret, Limerick

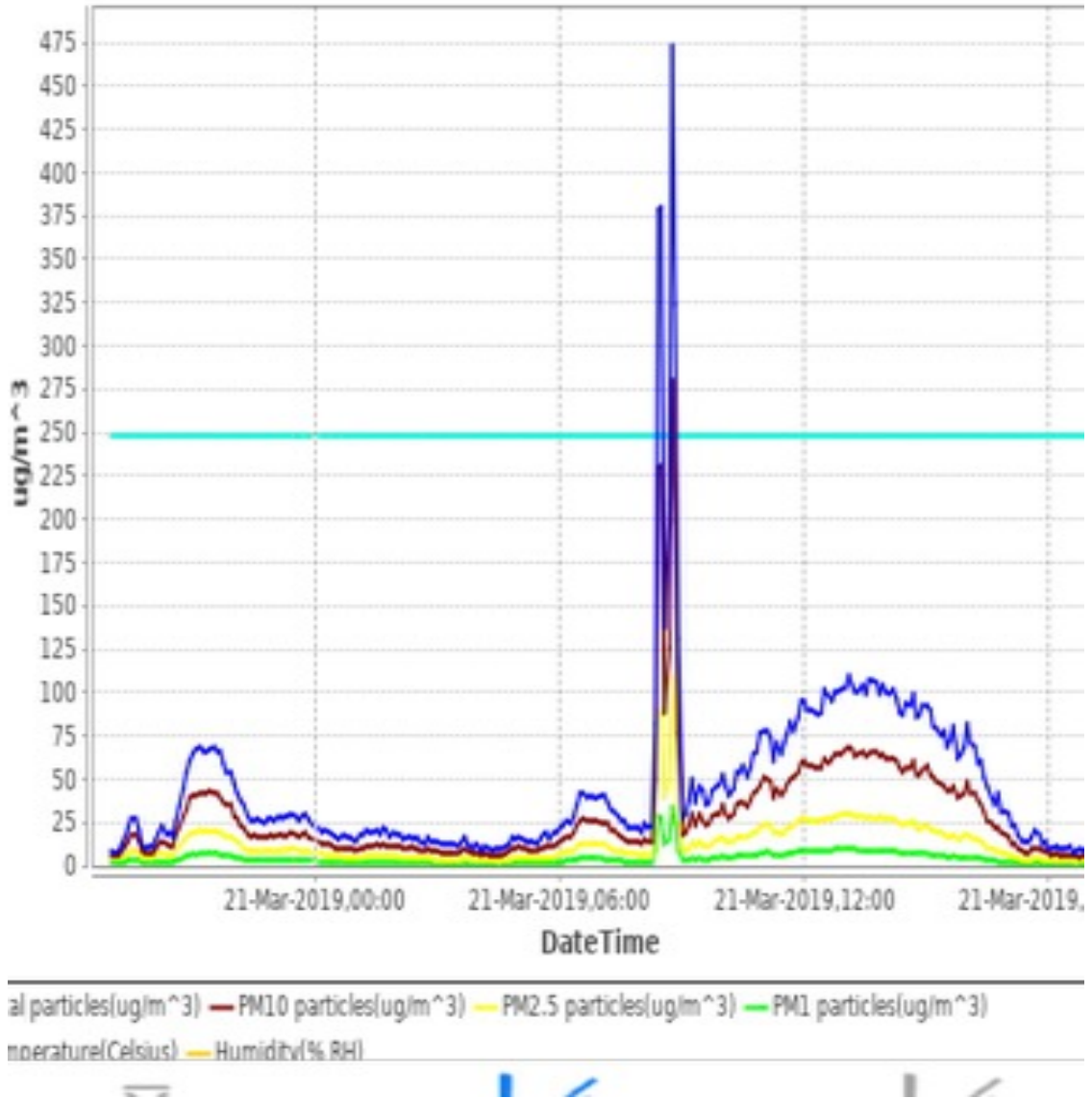


Figure 4.1 Air pollution “spikes” at Mungret, Limerick on 21 March 2019.

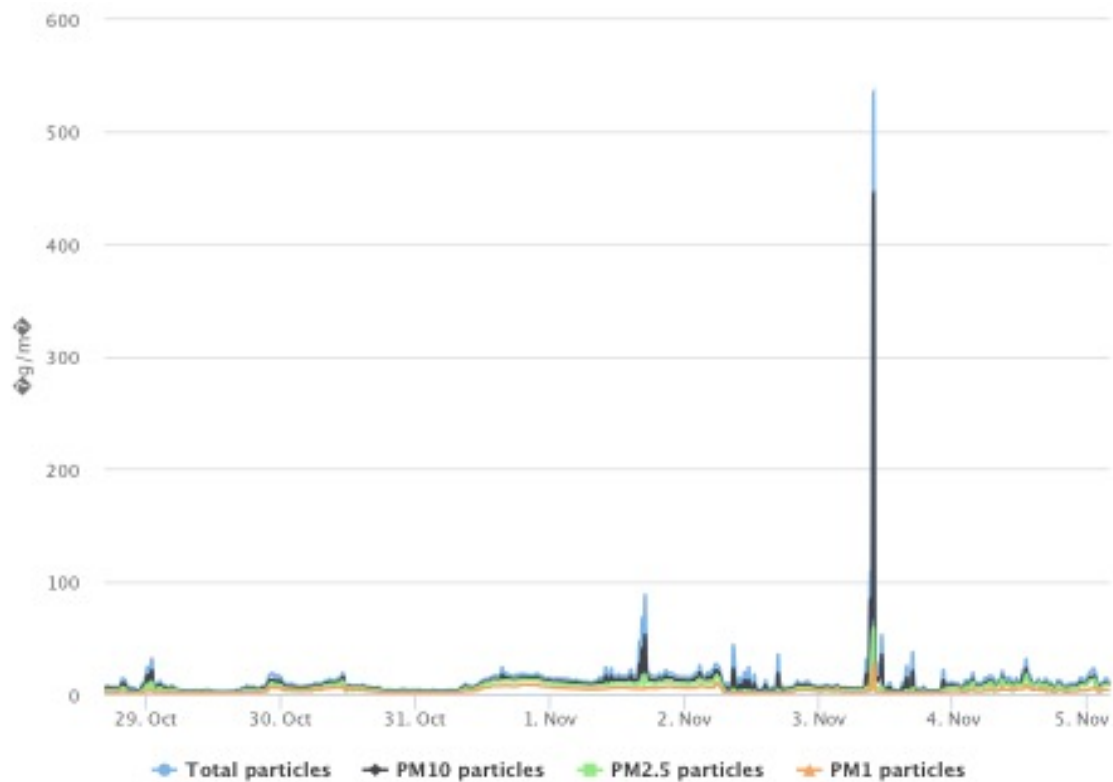


Figure 4.2 Air pollution “spikes” at Mungret, Limerick in November 2019.

It is very unlikely that such singular highly elevated levels of air pollutants could be the result of road traffic or domestic solid fuel burning, and we are left with the inescapable conclusion that the source is a nearby industrial plant.

Any industrial plant, and particularly a cement kiln, has an opportunity to increase emissions without breaching ELVs because averages are used to determine whether or not the plant is operating within the ELVs. A plant operator can easily escape regulatory attention by timing events such as a reactive process control and preventative maintenance. These events may be visible in continuous monitoring data, if emissions increase for an extended period of time, but remain under the averaging threshold. It is difficult to accept that this could happen without deliberate action by the operator, but also difficult to prove.

It is therefore our submission that nothing less than continuous independent air pollution monitoring is necessary; and the results should be available in real time for local citizens and other interested people and groups to view and examine.

We would also submit that “citizen science” can play an important and valuable role in the monitoring of air pollution; and the value and acceptability of citizen science is well recognised in other EU Member States. It is very disconcerting for those citizens, who have obtained the necessary experience and equipment to undertake monitoring, to discover that the results which they have carefully obtained are not accepted by, or are ignored by, statutory authorities.

5. TRANSPORTATION AND AIR POLLUTION

In section 3.2.2 (page 14), the NAPCP report states that the Climate Action Plan (CAP) includes an “*ambition for road transport fleet electrification*”, and a report on transport-related air pollution and a proposed evidence-based national policy framework to address this problem will be produced by the Urban Transport-Related Air Pollution Working Group (UTRAP) which was jointly convened by the Department of the Environment, Climate and Communications (DECC) and the Department of Transport (DoT) in autumn 2019; and this report will appear sometime in 2021.

Elsewhere in the NAPCP report (section 3.2.13, pages 19-20), the Greater Dublin Area (GDA) strategy is stated to have the aim of reducing dependence on private cars, and “*to support the increased penetration of cleaner transport technology throughout the national fleet*”.

Given the important role of cycling in reducing car dependency, we find it extraordinary and unexplainable that the NAPCP states only that “*there may be a shift to cycling/walking as people avoid mass transit modes*” as a result of the COVID-19 response (section 3.2.15, page 20). The provision of the necessary cycling infrastructure is not even mentioned.

It is widely known that car traffic in urban settings is a source of NO_x and Greenhouse Gas emissions. A new urban and rural transport policy is needed to achieve a very significant modal shift to bicycles and away from cars.¹⁹

The information on the ambient emissions for NO_x in Fig1 in the Report “*Emission Trend for Nitrogen Oxides 1990-2018*”, clearly shows the predominant impact NO₂ from traffic. Excluding the emissions from agriculture, which would be the case for urban areas, it’s obvious that NO_x exposure to the urban population is primarily from fossil fuel car engines.

5.1 Encouraging cycling to schools, as a way to reduce urban traffic NO_x pollution

The CSO provides figures for the extraordinarily high numbers of students that are driven by parents to school – almost 60%.²⁰ It is noticeable how freely the traffic moves in towns during the summer holidays, and how congested the towns are with traffic, when parents are collecting their teenagers from school. The provision of quality cycle ways between residential areas and schools should be a priority in urban street design from now on. Our very low numbers of cyclists is

¹⁹ See, for example, the excellent Sustainable Urban Transport Project promoted by the EU: <https://www.sutp.org/principles/encouraging-walking-and-cycling/> including a report on how 40 cities are implementing zero emission areas, and Fact Sheets on strategic recommendations for cycling development and promotion.

²⁰ <https://www.cso.ie/en/releasesandpublications/ep/p-cp6ci/p6cii/p6stp/>

in contrast to the numbers of youngsters cycling to school in the Netherlands as can be seen in the photo below.

The NAPCP Report 2020 Update places a particular focus on traffic mode changes in large Irish cities such as Galway, Dublin, Cork, Limerick, Waterford etc. We disagree however that these large urban areas should be the primary focus.



5.2 Providing traffic separated cycle-ways for all towns and all large villages.

In our view, there should be an equal focus on smaller settlements. In towns and big villages in all Counties of Ireland, where an urban public transport system would be less in demand, we recommend instead, that the streets be retrofitted with safe cycleways, in particular, to connect residential areas to schools and shopping areas.

The awareness of the dangers of Climate Change, the publication of the “*Smarter Travel – A Sustainable Transport Future*”, has been around for a long time now. To date in most rural counties, little has been achieved. There were various reasons for this failure:

1. Failure by the local authority management and an inept Senior Executive, to plan for, and to apply often enough for funding for traffic separated cycleways in urban areas and along old railways.
2. Failure to prepare, “well in advance”, “spade-ready” plans for cycleways.

3. Failure to consult early enough with the public on possible future plans for cycleways.
4. Failure to have early cooperation between the Planning Department and the Roads/Cycleways Department in any one local authority.
5. Failure to incrementally improve existing cycleways, on an on-going basis, that were badly designed in the first place.
6. Failure by the Executive to keep their promises to Councillors, to produce spade-ready plans for new urban and suburban cycleways.
7. Failure to appoint or resource a cycling development officer.
8. Infrequent and often no communication between local cycling advocacy groups, and decision makers in the Local Authority
9. Failure by the Local Authority, to communicate and actively co-operate with other state bodies, such as Iarnród Éireann, or Bus Éireann, to prepare plans for cycleways for inter-modal cycleway connections.
10. Failure by the Local Authority to apply for an EU Intereg funding of 85% for cross border cycleways, electric vehicle charging stations, and intermodal transport systems, to link cycleways, railway stations and bus stations together.
11. Failure by the County Council to fully comply or implement their own County Development plan, as it applies to cycleways and sustainable transport.
12. County Development Plans are written only with half-hearted intentions and commitments. There has been no serious investment program to provide “park and stride” measures, and for walking or cycling to schools. There has been a failure to retrofit streets to ensure that walking and cycling are promoted and encouraged, or to provide many new urban greenways for cycling.

Examples of the above are:

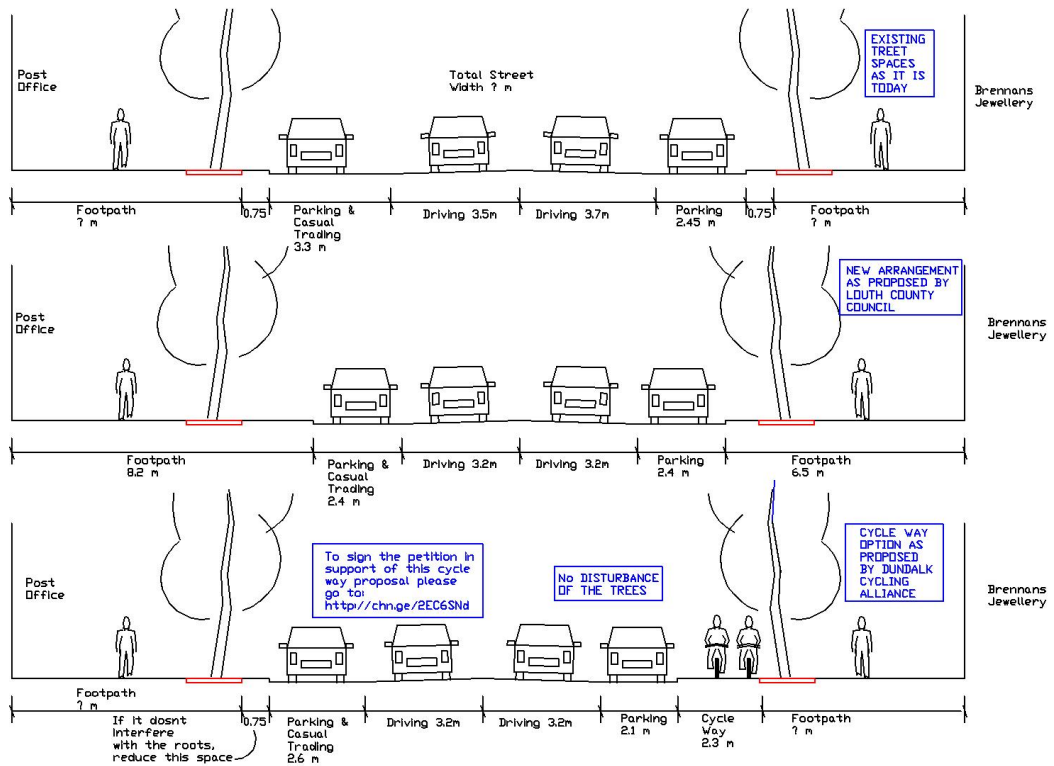
- In 2014 Louth County Council received funding for traffic separated cycleways to schools that were hastily planned, with poor community consultation and included many cycleway design flaws.²¹ One of the schools to be connected was St Vincents secondary girls school. The school Board of Management however has ever since been reluctant and unwilling to encourage the girls in the school to cycle. To encourage cycling, no effort has been made to allow for the use of tracksuit trousers when cycling to and from school. Louth County Council failed to

²¹ <http://www.cyclist.ie/wp-content/uploads/2014/05/Seamus-MacGearailt.pdf>

adequately consult with the board of management of the school early enough to avoid this failure. At the time of the construction of the new traffic separated cycleway in 2014, the number of girls cycling was around 1% -- today this number is not much different.

- Having “spade-ready plans” for cycleways in the past gave local authorities an ability to quickly avail of central Government surplus money that sometimes becomes available at the end of the Government Financial year. This was successfully availed of in Dundalk on one occasion. This money can be used to do small jobs such as connecting-up the various start/stop cycleways we have at present in towns like Dundalk. Over the last decade It has been difficult to get any commitment from the executive to have a few such spade-ready plans ready to go.
- The failure to plan well in advance only leads to poor implementation and engineering mistakes. In our view, the Part 8 Planning Process, where a local authority makes a planning application to itself, with input from the public is often too short. Certainly, in the past, this consultation period lasted only 1 month. This however is not long enough. The public should be allowed to think over proposals for many more months, so that initial knee jerk reactions can be thought about and considered more thoughtfully. The implementation of the cycle-way project to schools in 2014 was marred with strong objections from shop-keepers, and fears of a negative impact on their business, that in the end never came to pass. Consulting with people over a much longer period is a more conciliatory method to win support and prevents the sense of ultimatum that people felt at the time coming from the County Council.
- The failure of joined-up thinking between various departments in the Local Authority can lead to creating a cycle way disconnect. An example occurred in Dundalk with the building of a new Tesco shopping centre. Before the site was developed, there was a traffic-separated cycle-way on each side, one on Stapleton Place and the other on An Bóthar Iarainn. Rather than continuing with the same standard of cycle-ways the Planning Department allowed painted lines on the road for cyclists with no physical barriers against traffic. Furthermore, as a further example of their bad planning, these cycle lanes did not connect to the existing two traffic separated cycleways on either side of the new shopping centre. Instead of connecting the cycleways, the new development only disconnected them.
- Calls for the improvement and correction of badly designed cycleways, even if the cost would be small have been ignored. The cycleway road crossing in the example below, requires the cyclist to dismount after crossing the road. Then she/he must get through the narrow space on the footpath between the new traffic light and the stone wall, before continuing with his/her journey on the cycleway.

- Failure by the executive to keep promises made to councillors to begin planning for a cycleway to school only leads to cynicism. Louth County Councillors were voting to approve the upgrading of the main street in Dundalk. Some of the councillors were disappointed that no provision was to be made for a cycle-way on the main street.



Every effort was made to argue that a cycleway on the main street was feasible. The exclusion of the cycleway however was in contradiction of many aspects of the County Louth Development Plan. The rejection of the cycle way by the Executive only confirms the view that income from car parking on the main street was to be a more important consideration than the concern for climate change, the reduction of NOx air pollution or the promotion of a healthy active lifestyle.

- There was a failure to appoint a cycling officer. The following letter was sent to all local authorities on 14 March 2013, but was never acted upon by Louth County Council. The failure to appoint this person further eroded any hope that any further progress would be made for cycling in the County.

County Manager,

County Council 14 March 2013

Dear

The Department of Transport, Tourism and Sport is currently carrying out a review of the National Cycle Policy Framework 2009 -2020, with a view to identifying actions which have been completed and prioritising actions not yet completed.

The document can be found on the Department's dedicated website for sustainable travel website www.smartertravel.ie. The Government committed themselves to investment in the National Cycling Policy framework in the Programme for Government.

One of the key actions in the National Cycle Policy is the nomination of Cycling Officers in all local authorities:

17.3 Local Authority Cycling Officers

We will require each Local Authority to assign an officer at an appropriate senior level as a "Cycling Officer". He or she will establish a Cycle Forum and be responsible for overseeing the formulation and delivery of the local cycling policy.

This policy must be embedded within wider transportation policies and in the statutory plans. He or she will also be responsible for the up-skilling of staff within the local authority so as ensure that the competencies exist to fully implement the policies.

The Department is compiling a register of local authority cycling officers as the first step in its review of the Cycle Policy. The cycling officer will be the contact point for the Department in carrying out the review of the Cycle Policy.

Can you please send the contact details for the cycling officer in your local authority to the undersigned.

If there is currently no cycling officer in your local authority the following guidance may be of use in selecting a staff member to nominate as cycling officer:

- *they should be an enthusiastic cyclist themselves;*
- *they may be nominated from staff working on traffic, transport, planning, sports or leisure policies in the local authority (they do not have to be an engineer); and*
- *they should have good communication skills to be able to promote cycling across the local authority.*

If you have any queries please contact me on orlacorrigan@dttas.ie.

*Yours sincerely,
Orla Corrigan,
Sustainable Transport division,
Department of Transport, Tourism and Sport.*

- Communication between local cycling advocacy groups and the senior Executive of the Local Authority needs to happen much more frequently. On one occasion at a meeting with the Chief Executive and two other members of his team. I showed one video showing the difficulty and frustration of a father cycling with his son to school in New York.²² To contrast this, the other video showed how youngsters in the Netherlands of all age groups cycled safely to school.²³ After the videos, the Chief Executive quickly left, and his two colleagues stayed to explain that the Dutch system could never be provided here in Ireland ! This was very disappointing. Local cycling advocacy groups have a perspective and view that should be listened to by the Executive. The experience of cyclists who are using the cycleways already provided by County Council roads engineers is all too often not being responded to.
- There is a failure of communication between the Local Authority and other Public Transport agencies. The EU a few years ago offered 85% funding for intermodal transport initiatives along the border. This was to encourage EU citizens to move from trains, to buses to bicycles, instead of depending on private cars. At present, or up to recently, there has been very little communication and no cooperation between Iarnród Éireann, Bus Éireann, the Local Authority and local cycling advocacy groups. In spite of the opportunity of EU funding, Irish Rail were reluctant to discuss the provision of a new cycleway from Clarke Station through a nearby public park that would connect the train station to the local bus station and Dundalk Town centre. This failure to discuss co-operation to provide a

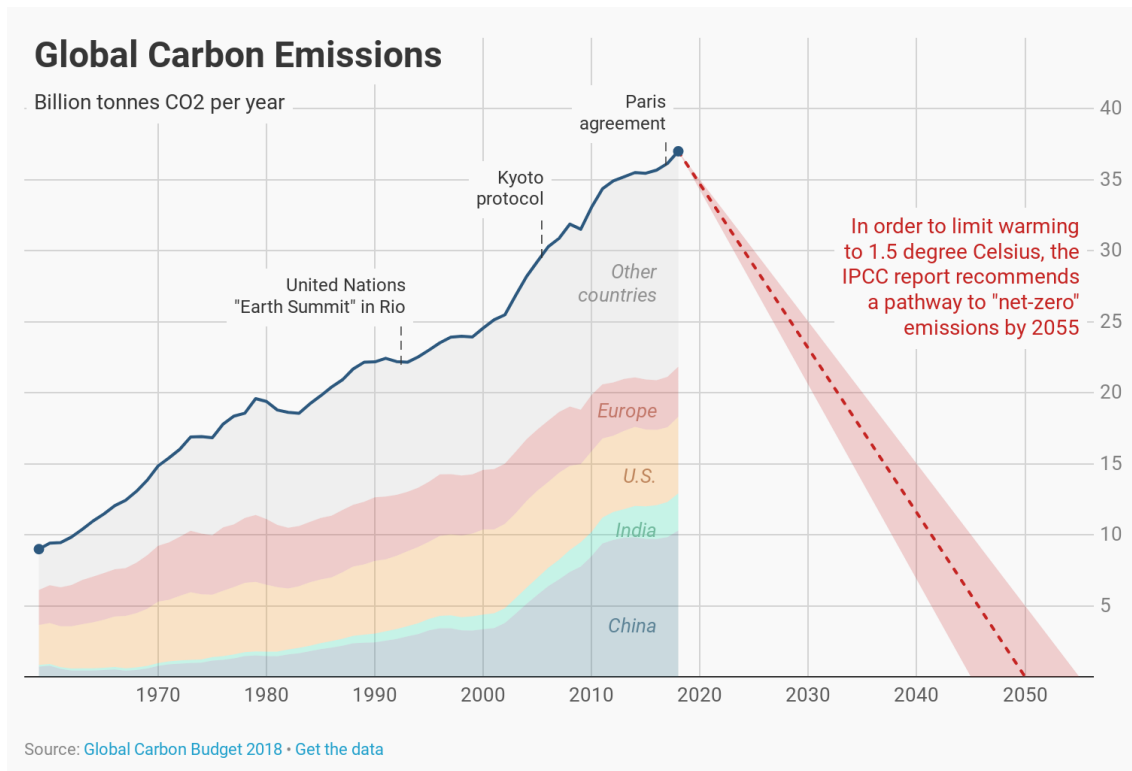
²² <http://www.youtube.com/watch?v=gK6r9ocFk9w>.

²³ https://www.youtube.com/watch?v=2n_znwWroGM.

safe cycle way route into the railway station, only prevents the move we need to move away from our present excessive dependence on cars.

- Louth Local Authority recently received funding to upgrade Clanbrassil St, the Main Street in Dundalk. The street upgrade plan did not include the provision of a cycleway. In doing so it was in breach with many of the elements of its own County Development Plans, to implement the Smart Transport Policy. Please see the attached letter to the Councillors in **Appendix I**. When considering house planning applications or other major developments, the County Plan is generally very strictly adhered to. This main Street redevelopment was another lost opportunity to lower Greenhouse gases and NOx pollution in the town centre. When elements of the County Development plan are to be ignored again, then the reasons for not doing so should be explained by the Executive.

The examples of past mistakes and lost opportunities that have been outlined above, must not happen again. Now that the new Government is planning to In spend very large sums of money on cycle-ways, the executive and the engineers must be more thoughtful than ever in doing the job right the first time. They must keep in touch with the planning department and the cycling advocacy groups. They must not continue to make more of their past mistakes.



In conclusion, just as efforts are being made to reduce emissions from Moneypoint, from agriculture, and other heavy pollution emitters, we need to significantly reduce the pollution from urban traffic also. Giving much more of the street space back to pedestrians and cyclists is a necessity if we are going to

have any chance of achieving a net zero greenhouse emissions target by 2050. This is the requirement in the Global Carbon Budget as set out by the IPCC.

At the very least, all streets in urban towns should be made one way only, to leave the other side of the street for cycling, and other forms of low carbon transport. This is happening on many roads and streets in Dublin and should also be implemented in smaller Irish towns such as Dundalk or Mullingar.

These measures will also encourage new types of cycling vehicles that can gradually replace the petrol and diesel fuelled car. In the photo below is an example of a cargo bike to carry children to school.



In the photo below is the American “ELF” solar panel powered and pedal operated bike/car.

In the photo further below is the Australian “Rotovelo” single person, rain protected recumbent bike.

If electric cars continue to be so expensive then the number of people cycling on traffic-free streets and use of these more affordable types of bikes will gradually increase.

DISCOVER YOUR INNER ELF

AVAILABLE OPTIONS:

Bring a friend or two
Choice of one or two rear seats with belts in the 2FR

Instrumentation
OT smartphone app with GPS and speedometer

NuVinci gear hub
Infinite gear shifting for pedaling comfort

Carbon fiber panels
Front and rear, reduces weight, adds strength

Fat tires
Wider 24"x3.0" tires for a softer, smoother ride

Bamboo cargo shelves
or aluminum side trays for heavier loads

LED side mirrors
Added visibility for your turn signals

Front parcel tray
Add storage space up front

Doors
Greater protection from the elements

Cycle Analyst
Track speed, miles and battery condition

Security cover
Custom-fitted water-repellent ripstop nylon



Excellent visibility in all kinds of weather

Attention-getting height in traffic

Hatchback with locking trunk

Carry groceries (12 bags), pizza, luggage, coolers, bundles, briefcases, even a couple of golf bags.

100W solar panel charges battery

Sturdy Tylon composite shell with Solarkote UV protection, available in Mango, Wasabi, Goji or White

LED headlights, taillights, brake lights, turn signals

Side and rearview mirrors

Bell, horn, and hand brakes

Comfortable breathable mesh adjustable seat

750 Watt motor

Dual disc brakes for stopping power

11Ah 48V Lithium-ion battery charges via the solar panel or using the included 120V charger

Internally geared hub for easy pedaling on hills, commute and heavy traffic

26" tires standard

Corrosion resistant aluminum frame and all stainless steel hardware

ZERO EMISSIONS • 160LB WEIGHT • 350LB PAYLOAD • 20MPH • 15+ MILE BATTERY RANGE • \$5495* BASE PRICE • MADE IN USA
*FINANCING AVAILABLE

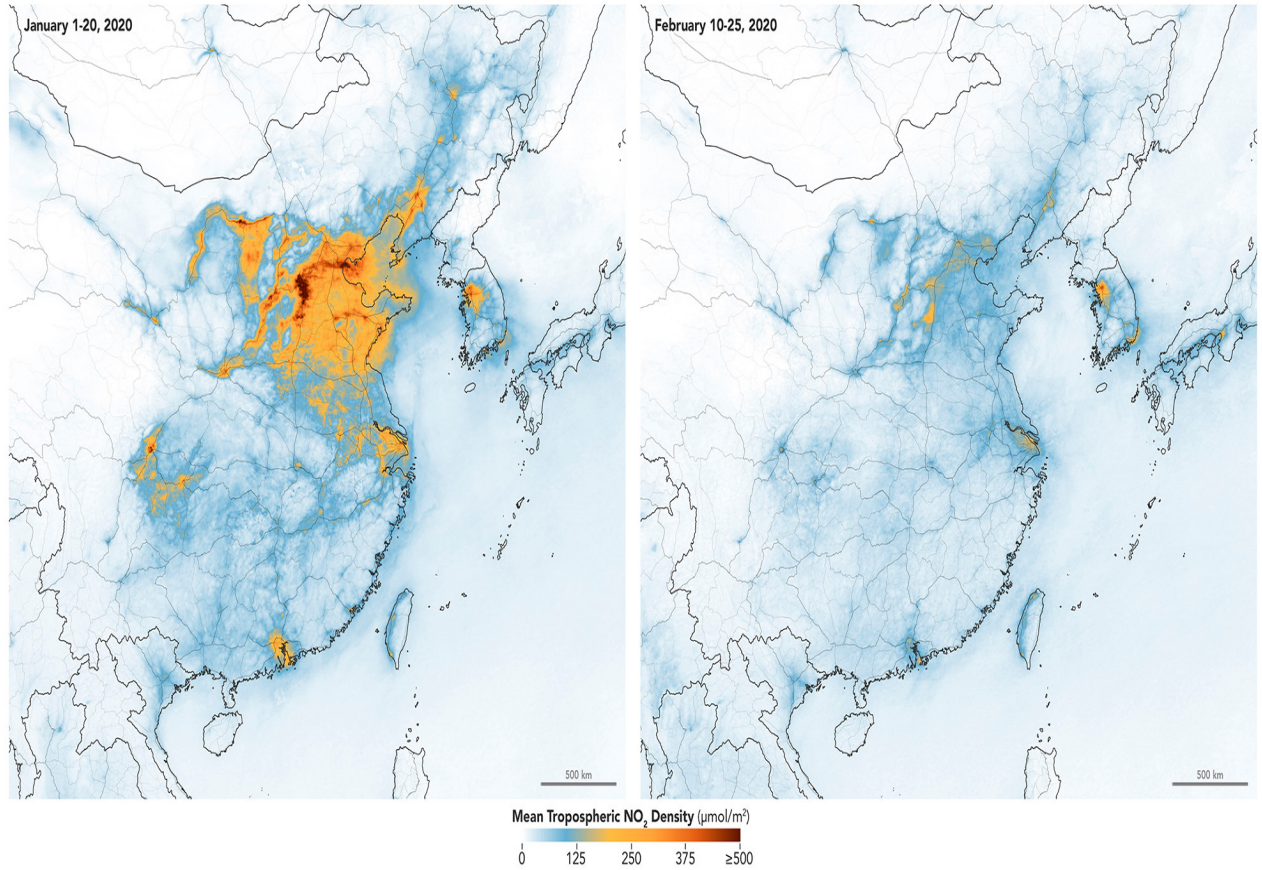

ORGANIC TRANSIT



Lastly, what would happen if we finally got rid of all emissions from cars in our cities? The pollution of greenhouse gases and NO₂ will drop very significantly when car numbers are reduced in our towns.

We must not forget the streets were very quiet during the first shut down for Covid-19. Everyone was asked to stay at home and not to travel at all. The satellite image below of China shows the levels of air pollution before the pandemic, and the huge reduction of NO₂ during the travel lockdown. The same phenomenon occurred in every other city in Europe and elsewhere as well. This is what we need.

If we do indeed want to greatly reduce NO₂ air pollution, greenhouse gases, and promoting better health – then let us install the safe Dutch standard cycleways and remove the obstacles that have prevented us in the past from breathing clear unpolluted air in our cities, towns and villages.



Infographic of China showing the levels of air pollution before the pandemic (on the left), and the huge reduction of NO₂ during the travel lockdown (on the right).

6. ROLE AND RESPONSIBILITY OF THE ENVIRONMENTAL PROTECTION AGENCY

6.1 General Role of the Environmental Protection Agency

Under the Environmental Protection Agency Act 1992, the EPA is responsible for the Integrated Pollution Control (IPC) licensing of large or complex industries with significant polluting potential. It is responsible for monitoring emissions from such industries and dealing with any infringements of licence terms. Offences under the Act can result in the EPA taking companies to court. The court can impose fines and prison sentences and the EPA can revoke a company's licence.

The EPA may grant a licence only if it is satisfied that the licence holder will do its utmost to prevent or limit any emissions from the plant. All emissions must be within set limits and must not contravene any relevant air quality standard.

Environmental enforcement in general is undertaken by local authorities and the EPA; however, members of the public (and therefore NGOs) can themselves enforce the legislation (and in many cases do so).

The EPA use the District Court mainly to secure convictions, where if convicted, companies could be fined up to €5,000 plus (significant) legal costs. Over the past 5 years the EPA has secured 69 convictions in the District Court for licence breaches.

The maximum fine in the District Court of €5,000 is not adequate in our opinion. Many of the companies whom have been prosecuted by the EPA over the past 5 years are extremely profitable, and a €5,000 fine is insignificant in terms of their overall balance sheet. Much higher penalties should be considered, such as suspension of an emissions licence or an increased scale of fines.

Ms Laura Burke, Director General of the EPA, stated in an Irish Times article in 2012, that the Environmental Protection Agency should not be "*racine to prosecute*" businesses for failing to comply with environmental licences, conditions and regulations. In our view, this statement sends out the wrong message to industry and gives the impression that the EPA are in no hurry to pursue those who do not adhere to the conditions of their license. The EPA was set up to protect the environment and the citizens of this country, and this statement does not offer reassurance.

The Department should be aware that, because of the lack of EPA monitoring stations in Ireland many community groups have taken it upon themselves to monitor industry in their locality and report their findings to the EPA.

The EPA also need to review their process around derogations, especially when it comes to repeat derogations as it has been noted in some cases that repeated derogations implies that they are not improving their processes within a timely matter.

Also problems that are flagged by the EPA in relation to a particular license are in some cases allowed to continue operating without proper enforcement measures been implemented again within a timely matter.

While the observations above are directed at the EPA, it is our submission that the Department should consider them as indicating an urgent need to provide stricter policies on air pollution which would allow the Agency to become more pro-active in ensuring that holders of Industrial Emissions licences are complying with conditions and regulations. In our experience, self-monitoring and self-regulation do not protect either the environment or local inhabitants who are exposed to atmospheric emissions from licensed industrial plants.

6.2 Immunity of the Environmental Protection Agency from Prosecution

In section 2 (page) of the draft National Air Pollution Control Programme, the Environmental Protection Agency is mentioned as the relevant competent authority with responsibility for reporting on emission inventories and projections. The Agency is also responsible for enforcement and licensing; but since it has a legal immunity from being sued, there is no remedy or means available to the public if this Agency fails in its duty of enforcement and licensing.

The Environmental Protection Agency Review carried out by an independent expert review group in 2011 stated that:

“The EPA’s current blanket statutory immunity when carrying out its functions is difficult to justify in a modern context and should be revised.”

Furthermore this immunity is likely to be inconsistent with the State’s obligation under Article 40.3 to defend and vindicate the citizen’s personal rights. As such to ensure that effective enforcement and licensing are carried out, it is our submission that this immunity should be removed.

According to the Ombudsman (Amendment) Act 2012; the EPA is an exempt agency and so does not fall under the remit of the Ombudsman. It is our further submission that the administrative of the EPA should be brought under the remit of the Ombudsman for improved transparency. The Environmental Protection Agency Review Report states:

“The combination of a strengthened Advisory Committee, revision of the blanket statutory immunity and the extension of the Ombudsman’s powers to cover any alleged maladministration should together meet the concerns expressed by critics of the present EPA governance structure, without introducing unduly costly duplication of effort.”

While the above suggested changes may be outside the immediate scope of the public consultation on the draft NAPCP, we believe that they are sufficiently relevant and important to warrant their inclusion in our submission.

7. THE RIGHT TO AN ENVIRONMENT CONSISTENT WITH HUMAN DIGNITY AND WELL-BEING

In previous submissions to other Agencies, members of Zero Waste Alliance Ireland pointed out that the Government framework for improved Health and Wellbeing in Ireland for 2013 to 2025²⁴ defines health as ‘*potential to enjoy complete physical, mental and social wellbeing*’ and has the effect of shifting our focus from what can go wrong in a person’s life to what can go right. The Healthy Ireland framework describes health in terms of social determinants of health, and these comprise those factors in society or living conditions that contribute to good or bad health. By contrast, health within environmental legislation is often interpreted with a narrower lens, primarily discussed in terms of mitigation of potential negative impacts to physical health; and we have addressed in section 3 above the failure by regulatory agencies to take proper account of human health in their decision-making processes.

We also note that the definition of “Health” in the EIA Directive has been redefined as ‘*human health and populations*’ in the 2014 EIA Directive. The European Commission guidance on scoping describes impacts on human beings in terms of physical impacts (e.g. exposure to chemicals, noise, radiation) and social health determinants; and, in most earlier Environmental Impact Statements and Assessments, the consideration of impacts on human beings has typically been reduced to physical health impacts, generally on a statistical basis. The same is true for environmental licencing and the granting or with-holding of planning consents – the consideration of health is reduced to managing peoples’ exposure to pollution, an approach based on BAT-ELV with risk-based considerations included where required.

The Environmental Protection Agency and An Bord Pleanála have used, and continue to use, this approach; which, we continue to submit, is too narrow, given the growing, and now current, understanding that the maintenance of good health in its widest sense requires an environment “*consistent with human dignity and well-being*”.

A very relevant definition of what constitutes an appropriate environment for maintaining human health and well-being comes from the High Court Judgment in *Merriman & ors -v- Fingal County Council & ors* and *Friends of the Irish Environment Clg -v- Fingal County Council & ors* ([2017] IEHC 695, 2017 201 JR and 2017 344 JR), in which Mr Justice Barrett stated that:

"A right to an environment that is consistent with the human dignity and well-being of citizens at large is an essential condition for the fulfilment of all human rights. It is an indispensable existential right that is enjoyed universally, yet which is vested personally as a right that presents and can be seen always to have presented, and to enjoy protection, under Art.

²⁴ Healthy Ireland – A Framework for improved Health and Wellbeing in Ireland from 2013 to 2025. Department of Health, April 2013.

40.3.1° of the Constitution. It is not so utopian a right that it can never be enforced. Once concretised into specific duties and obligations, its enforcement is entirely practicable. Even so, every dimension of the right to an environment that is consistent with the human dignity and well-being of citizens at large does not, for the reasons identified previously above, require to be apprehended and to be described in detail before that right can be recognised to exist. Concrete duties and responsibilities will fall in time to be defined and demarcated. But to start down that path of definition and demarcation, one first has to recognise that there is a personal constitutional right to an environment that is consistent with the human dignity and well-being of citizens at large and upon which those duties and responsibilities will be constructed. This the court does".²⁵

It is our submission that the statement by Mr Justice Barrett is extremely important; it is the fore-runner of a changing legal understanding in Ireland of environmental rights, and should be taken into account by the Department when revising the National Air Pollution Control Programme.

In making decisions on industrial emissions licensing applications, the Department should consider and issue a regulation or Policy Direction that would require the Environmental Protection Agency to accept that it has a “*concrete duty and responsibility*” to ensure that the quality of the environment to which Mr Justice Barrett referred is maintained, improved if necessary (and there appears to be no doubt that the presently experienced air quality in many locations in Ireland is significantly less than optimum, and that revised or new Industrial Emissions Licences for industrial plants should include much higher levels of environmental protection, to be achieved by the licensee and by the Agency as the enforcement authority.

In addition to the High Court judgment cited above, the Department should also be aware of a more recent decision by the Administrative Court in Montreuil, France, which held that the state is liable to a mother (Mrs. T) and daughter, for inadequacy of air quality. As reported in *The Jurist*²⁶, Mrs. T brought the claim with the backing of NGOs after both herself and her daughter suffered respiratory health issues including bronchitis and asthma. Mrs. T said that both of their health issues cleared up when they moved out of the city of Paris and into the countryside. They claim that the French authorities did not do enough to address atmospheric pollution, specifically during a particularly bad period in December 2016.

²⁵ Judgment in the two High Court cases of *Merriman & ors -v- Fingal County Council & ors* and *Friends of the Irish Environment Clg -v- Fingal County Council & ors* ([2017] IEHC 695, 2017 201 JR and 2017 344 JR), which were heard in tandem, was delivered on 21 November 2017.

²⁶ “France Court holds government liable in air pollution case”. *JURIST*, Legal News and Research, 25 June 2019. <https://www.jurist.org/news/2019/06/france-court-holds-government-liable-in-air-pollution-case/>

Their claims were brought on the basis that France had failed to meet the responsibilities outlined in Articles 13 and 23 of the EU Air Quality Directive, which require that Member States meet targets, and do not exceed an “*emissions ceiling for atmospheric pollutants,*” and to make the reporting of air quality and information accessible. Additionally, they claimed France had not met the responsibilities of the European Convention on safeguarding human rights, Articles 2 which protects the right to life, and which protects the right to private and family life. And finally, they claimed that France failed to meet Article L. 220-1 of the Code of the Environment, which protects the right of everyone to breathe air that does not harm their health.

The court ruled in favour of Mrs. T for her claims against the state for responsibility to address the pollution, but the court ruled against their claims for compensation, denying the mother and daughter financial damages. This ruling is a first and will likely have an impact on some 40 other cases on the same issue that are awaiting judgement in other French cities.

ZWAI again submits that the public right to a clean environment, i.e., to an environment “*that is consistent with the human dignity and well-being of citizens*”, and is therefore “*an essential condition for the fulfilment of all human rights*”; such a right being necessary to support peoples’ “*potential to enjoy complete physical, mental and social wellbeing*”, is now a justiciable right, and is therefore an appropriate ground for taking proceedings against a Government Department or Agency which fails to uphold that right.

This submission was prepared by **Zero Waste Alliance Ireland** members Ollan Herr, Ioannis Zabetakis, Claire Keating, Derek O’Dwyer, Owen Wynne and Jack O’Sullivan.

The assistance of Ms Dalia Smelstoriūtė in helping with the preparation of this submission is gratefully acknowledged.

22 January 2021



www.DundalkCyclingAlliance.com

"Safe Cycling for Dundalk"

To Louth County Councillors
25th March 2018

Re: Clanbrassil Street Re Development – narrow carriage ways and big wide footpaths - Will it be another missed opportunity?

Dear Councillors,

I'm asking you at your Municipal District Meeting on the 3rd April to insist that Clanbrassil Street Re Development would have a Dutch standard, safe, traffic separated cycleway and that this cycleway would extend at a future date to connect to the rest of the existing traffic separated cycleway network in Dundalk. **The text in red is cut directly from the County Development Plan**

The proposal by the Executive as it stands is simply to slow car traffic further on the Main Street and to have unnecessary wide footpaths. No safe traffic separated cycle ways are being proposed to make better use of this extra space. This will be a missed opportunity if we are to seriously plan for the challenges we are all facing for the future.

Without providing this traffic separated cycleway on Clanbrassil Street:

- There will be a lost opportunity to avoid the growing car traffic congestion in Dundalk at school opening and closing times. This large investment will do nothing to reduce our dependency on cars on our streets in Dundalk. With slower car movements and a growing town population it won't be possible to push greater numbers of people or shoppers into Clanbrassil Street unless a safe quality cycle way is also provided.
- There will be a failure to offer alternative transport options to shop in the Town Centre for the growing number of people who don't use cars or don't own a car. For people on low incomes we need to facilitate more people to stretch their incomes and to shop using a bicycle.
- By encouraging a much greater cycling culture we will reduce the number of car parking spaces that are occupied on Clanbrassil Street. Shopping with bicycles is becoming very popular as a way to go shopping in Europe. Google "Shopping by bike (Netherlands)" How people on bikes go shopping in Europe.

https://www.youtube.com/watch?v=dFc61Ku1P_M

- Without a safe cycle way on the Clanbrassil Street we will fail to encourage many more people to adopt a regular, daily, healthy, active, lifestyle; and to promote better long term health. Google NHS “Benefits of Exercise” <https://www.nhs.uk/Livewell/fitness/Pages/whybeactive.aspx> In addition Smarter Travel also highlights the health benefits if regular cycling <https://www.smartertravelworkplaces.ie/benefits-of-cycling/>
- Under the Smarter Travel policy document from the Department of Transport “**A Sustainable Transport Future, a New Transport Policy for Ireland 2009 – 2020**” Action 4 states as follows:
“The delivery of public transport, cycling and promotion of more sustainable travel patterns generally in many existing urban centres can only be achieved through retrofitting. We will require local authorities to prepare plans to retrofit areas towards creating sustainable neighbourhoods so that walking and cycling can be the best options for local trips, for example to reach local facilities such as shops and schools.” We in the Dundalk Cycling Alliance do not believe that asking inexperienced cyclists to cycle with or between the moving cars in a busy main street is the “best option” for local trips to shops and schools. The Executive are simply making no effort to implement the necessary changes required under Action 4 above.
- This Part 8 Clanbrassil Street proposal from the Executive fails to implement almost all of the important sustainable transport policies in the current **Louth County Development Plan**.
https://www.louthcoco.ie/en/Publications/Development-Plans/Dundalk-Development-Plan-and-LAP-s-/Development_Plan_2009-2015/Written-Statement-.pdf
- Strategic Objectives page 18, *1.9 Strategic Objectives. SO5 Provide a sustainable transportation system for Dundalk and Environs to secure the successful integration of land use and for the convenience of the public.* The continuing domination of public space by car traffic and car parking along the Main Street is contrary to any efforts to secure better integration of land use for the provision of more sustainable transport options for the public; such as cycling.
- Permeability. Narrowing the carriage ways on Clanbrassil Street to further slow the speed of cars and the through put of cars passing while at the same time failing to encourage or increase the other transport options such as cycling will be in breach of **Policy TC8**, Page 65. This states *“Promote greater connectivity and permeability throughout the town through the provision of improved roads, pedestrian and cycling facilities”*. In what way will the main street be more permeable for traffic by encouraging our continuing dependency on cars only while at the same time slowing traffic speeds down at the same time? Surely the number of cars passing through the street will be less if cars are moving slower? Why is there no better cycling facilities to promote greater connectivity and to compensate for the lower permeability of car traffic?

- **Accessibility. PolicyTR7** Page 76 states: *“Improve accessibility and mobility within the town centre through the provision of traffic management plans & improve cycle and pedestrian facilities”* Again I think that we will miss the opportunity to improve the management of traffic by failing to facilitate cycling and not just be depending on cars alone.
- **Connectivity. Policy TR5** Page 75 states: *“Improve the connectivity of developed and underdeveloped lands within the Town Centre by the provision and development of green routes along existing and proposed road links”* Given that the Main Street is an existing road link, surely it should be provided with a green route for cyclists?
- **Under 5.2.1 Dundalk Town Centre Transportation Study.** In section 2. It undertakes to achieve the following *“Walking and Cycling □ Provision of pedestrian, cycle friendly and low trafficked areas and Re-distribution of road space to non car modes”* The provision of footpaths is already generous in this new plan but where is the redistribution of road space for other non car modes such as cycling? Furthermore it states under *“Parking Reduce town centre parking demand within the town centre by the provision of park and ride facilities on sites outside the town centre”* Why are we missing the opportunity to make better use of the spare car parking capacity that is already available in Mc Evoy’s and Boyd’s car parks? Why are we keeping car parking along the narrowest stretch of Clanbrassil Street and prioritizing this over the provision of a safe cycle way when shoppers can, over a very short distance, easily walk or stride from these two car parks to the nearby shops on the main street?
- **Business in the town centre** Under 1.6 Population, Page 13 the Dundalk and Environs population is projected to grow from 58 thousand in 2016 to 63 thousand by 2020. If more shoppers are going to try to enter the town centre, while at the same time the throughput of car traffic is being restricted by lower speeds or traffic calming; then more people will be frustrated with the town centre. The greatest opportunity for shopping growth will be on the outskirts of Dundalk. A growing population will tend to bring heavier traffic and more traffic congestion – this will make the town centre less attractive to drive into. A growing number of people will want to go to town on a bicycle. If traffic conductivity through the town centre becomes frustrating, if traffic congestion continues to grow in Dundalk because we continue to depend exclusively on car traffic alone, as has been happening in Dublin; then Dundalk will be continuously on the back foot struggling with traffic issues for ever more. People will choose more often to shop on the periphery of the town rather than going into the town centre.
- **Deliveries & Parking.** The Dundalk Cycling Alliance is requesting the removal of about 12 car parking spaces along the narrowest stretch of the Main Street. One of the advantages of having permanent traffic separated cycle ways is that the short term parking space for deliveries

to pubs for example can never taken up by illegal car parking. Pub owners at present find it difficult to “book” a delivery space for the delivery lorry. Allowing a delivery lorry to park in a segregated cycle way for 15 or 20 minutes is a more reliable situation for the pub owner and less frustrating for the driver. Having flexibility to block the cycle way for 20 minutes every 2 days or so by delivery or emergency vehicles is a reasonable compromise for traders and the cyclists. Cyclists will still have the facility of a quality traffic-separated cycle way most of the time.

- **Cycling to Coláiste Rís** There is an opportunity here to provide a safe cycle way along Clanbrassil Street. We suggest that cyclists coming down the Main Street would enter the CBS schools via Wrightsons Lane and later on, via York Street. In the County Development Plan it states *“Policy TR 14 Support the Safe Routes to Schools Initiative in co-operation with school authorities, community groups and public transport providers”*. Furthermore in section 5.5.2 *Safe Routes to Schools A major source of traffic congestion and road usage is the school car journey. Congestion is noticeably less during school holidays. Children should be encouraged to walk, cycle or take the school bus in an effort to discourage car journeys.Parents are reluctant, for safety reasons, to let their children embark on this journey alone....* We agree with this statement in the Development plan. It is for this reason we cannot understand why the proposal is to have cyclists on the main street

Please Google **“P.S. 87 Parents Endangering Schoolchildren”**
<https://www.youtube.com/watch?v=gK6r9ocFk9w> In contrast in the Netherlands however the older secondary school children are perfectly safe cycling to school without being supervised. Please search Google : **“Cycling to school; Culemborg (Netherlands)”**
<https://www.youtube.com/watch?v=OrQ-d2PBUto>

In our pro cycling submission proposal for Clanbrassil Street we have the opportunity to move in this same direction as in Holland.

- **Reducing Greenhouse Gases** This present car centred proposal for Clanbrassil Street will offer nothing to reduce greenhouse gases. We must facilitate people to play their individual part in reducing Greenhouse Gas Emissions by cycling to shops instead of using cars.
- **Avoiding more violent and more frequent storms.** Over the coming decades and for our own self interest we need to protect people and property in county Louth from chaotic climate change and violent storms and floods. We need to recognise that with climate change these storms will get worse and happen more often. Please Google Irish Times Storm Ophelia: a county-by-county damage report
<https://www.irishtimes.com/news/environment/storm-ophelia-a-county-by-county-damage-report-1.3258433>
- **Space allocation on the new Clanbrassil Street.** Please find our analysis of the space that is still available for the traffic separated cycleway that we are proposing.

Lastly - We appreciate the various conflicting and competing arguments that
Councillors must consider
Thank you for reading our submissions
Many thanks for considering the many issues we are raising

Yours Sincerely,

Ollan Herr

Dundalk Cycling Alliance

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Public Consultation on the National Air Pollution Control Programme (NAPCP)

From Department of the Environment, Climate and Communications

Published on 9 December 2020

Open for submissions from 9 December 2020

Submissions close on 22 January 2021

Last updated on 9 December 2020

Consultation is open

The Department of the Environment, Climate and Communications (DECC) is updating the National Air Pollution Control Programme (NAPCP). The NAPCP is a technical document which outlines the pathway Ireland will follow to achieve compliance with its commitments under the National Emission Ceilings Directive (NEC Directive) .

The National Emissions Ceilings Directive (NEC Directive) establishes emission ceilings for 2020 and 2030 for five specified pollutants: nitrogen oxides (NO_x), non-methane volatile organic compounds (NMVOCs), sulphur dioxide (SO₂), ammonia (NH₃) and fine particulate matter (PM_{2.5}). It also mandates the development of a National Air Pollution Control Programme (NAPCP) for each Member State. The format of the NAPCP is set down by the European Commission in implementing decision (EU) 2018/1522, which was adopted on 11 October 2018.

The National Air Pollution Control Programme includes:

- An overview of sectors and national policy frameworks in Ireland that impact on emissions of the five NEC pollutants;
- An overview of the current outlook for compliance with NEC targets for each pollutant;
- Projections of relevant pollutant emissions to 2030; and,
- Policy options, measures and actions across sectors but in particular in the residential, transport agricultural and energy sectors aimed at reducing emissions of the five specified air pollutants.

We are now inviting relevant stakeholders to submit their views on the draft NAPCP and any additional analysis or evidence that could be considered. The results of this consultation process will be included in the final NAPCP. In particular, we will be including a summary of the outcomes of the consultation with respect to the selection of measures and the consideration of the most suitable instruments and actions to implement the selected measures.

The closing date for submissions is **5.30pm on Friday 22 January 2021**

Submissions should be sent by email to airquality@decc.gov.ie or by post to:

Draft National Air Pollution Control Programme Consultation
Air Quality Division
Department of the Environment, Climate and Communications
Newtown Road
Wexford
Y35 AP90



Jack O'Sullivan <jackosullivan2006@gmail.com>

NAPCP public consultation - acknowledgement**Appendix III**

Colm Lambert <Colm.Lambert@decc.gov.ie>
To: Jack O'Sullivan ZWAI <jack@zerowasteireland.com>

27 January 2021 at 17:19

Dear Zero Waste Alliance Ireland,

The Department of the Environment, Climate and Communications confirms receipt of your submission for the public consultation on the National Air Pollution Control Programme (NAPCP). All submissions are currently being reviewed. Many thanks for taking the time to contribute.

Best regards,

The Air Quality team.

An Roinn Comhshaoil, Aeráide agus Cumarsáide

Department of the Environment, Climate and Communications

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Tá eolas sa teachtaireacht leictreonach seo (agus b'fhéidir sa chomhaid ceangailte leis) a d'fhéadfadh bheith príobháideach nó faoi rún. Is le h-aghaidh an duine/na ndaoine nó le h-aghaidh an aonáin atá ainmnithe thuas agus le haghaidh an duine/na ndaoine sin amháin atá an t-eolas. Murab ionann tusa agus an té a bhfuil an teachtaireacht ceaptha dó bíodh a fhios agat nach gceadaítear nochtadh, cóipeáil, scaipeadh nó úsáid an eolais agus/nó an chomhaid seo. Más trí earráid a fuair tú an teachtaireacht leictreonach seo cuir, más é do thoil é, an té ar sheol an teachtaireacht ar an eolas láithreach. Deimhnítear leis seo freisin nár aims odh víreas sa phost seo tar éis a scanadh.