



Basildon Borough Local Plan

Climate Change & Air Quality Topic Paper

September 2020

Table of Contents

.....	1
Introduction	3
Part 1: Climate Change Mitigation and Adaptation	3
Basildon Local Plan policies	4
Local Plan Evidence Base	5
Renewable Energy Options Topic Paper (March 2017).....	5
Renewable and Low Carbon Energy Constraints and Opportunities Assessment (December 2015)	5
Legislation and policy context on climate change.....	5
Reducing overheating in buildings.....	7
Local standards for energy efficiency of new buildings.....	7
Role of Local Plans in Climate Change Mitigation and Adaption	7
National climate change policy update (post March 2019).....	8
UK 2050 ‘net zero’ carbon target.....	8
Future Homes Standard.....	8
National Design Guide 2019.....	9
Recommendations for Policy Modifications – Climate Change Adaptation:	10
Part 2: Air Quality	12
Introduction.....	12
Basildon Local Plan policies	12
Local Plan Evidence base.....	13
Legislation and policy context on air quality.....	13
National Planning Policy Framework (NPPF)	13
Background to Air Quality Management Plan (AQMP) proposals for Basildon.....	14
Local Plan Post-submission evidence on air quality.....	15
Planning Practice Guidance (PPG)	15
DEFRA Ministerial Direction on Air Quality, June 2019	15
Clean Air Zones.....	16
Basildon Local Plan Air Quality Review May 2020	17
Recommendation 1 for Policy Modifications – Air Quality:	18
Emissions from biomass technology.....	18
Policy Modification Recommendation 2 – Air quality impacts of solid fuel burning:	18
Basildon Local Plan Sustainability Appraisal Second Addendum 2020	19
Policy Modification Recommendation 3 – Site Specific Air Quality Mitigation:.....	19

Introduction

- 1.1. Basildon Borough Council has prepared this topic paper for the purpose of reviewing the Local Plan's coverage of planning policy measures in regards to climate change and air quality, taking into account new evidence and guidance that has arisen since the submission of the Local Plan for Examination in Public in March 2019.
- 1.2. This paper intends to provide evidence to the Examination that the Council has acknowledged new evidence on climate change and air quality matters and has considered it against the submitted Local Plan. The policy recommendations detailed at the end of this report are intended to be submitted as main modifications sent for consideration and final decision by the appointed Inspector.
- 1.3. Therefore, the main objectives of this topic paper are:
 - To outline new evidence and planning guidance on climate change and air quality matters that has arisen since submission of the Plan
 - To appraise the effectiveness of the existing policies in achieving climate change and air quality objectives in light of this evidence
 - To recommend any amendments to policies set out with the submitted plan as modifications for consideration by the Inspector at Examination

Part 1: Climate Change Mitigation and Adaptation

- 2.1. Reducing greenhouse gas (GHG) emissions, including carbon dioxide (CO₂), is key to limiting the impacts of climate change, and action will need to take place at a range of levels; global, national and local. At a local level, the local plan can ensure that new developments are designed to produce fewer GHG emissions and can also enable retrofit improvements to existing developments to reduce their emissions. To improve sustainability and effectively tackle the causes of climate change, development will need to adopt innovative design and construction practice that delivers energy efficient and low emissions homes and other buildings.
- 2.2. Green infrastructure (GI) can provide a range of climate change services that can make both a substantial contribution towards adapting to climate change and important contribution towards mitigating climate change. GI also help to deliver multiple other social, economic and environmental benefits.
- 2.3. Mitigation alone will not be adequate to address the issue of climate change. Weather patterns and the climate are already changing and will continue to do so for the foreseeable future, so it is important that new developments are suited to current and future climate conditions; new buildings should be comfortable to inhabit for their lifetime to avoid the need for retrofitting or replacement further down the line.

Basildon Local Plan policies

- 2.4. The Basildon Borough Revised Publication Local Plan October 2018 (RPLP) has been submitted to the Secretary of State for Examination in Public. Policy CC1 of the Plan sets out the Council's development strategy on climate change:

Policy CC1: Responding to Climate Change

1. The Council will seek to reduce carbon emissions, and the impacts of the Borough on climate change by encouraging greater levels of sustainability through development, and by putting measures in place that encourage individuals within the community to be more sustainable. This will be achieved by:

- a) Identifying development locations with good access to services and public transport provision;*
- b) Working with partners to deliver improvements to public transport and active travel modes as set out in policies T3 and T4;*
- c) Working with partners and developers to deliver multi-functional green infrastructure as set out in policy NE1;*
- d) Seeking high quality sustainable design of new homes, commercial and industrial buildings that promotes energy, thermal and water efficiency and opportunities for natural cooling as set out in policies CC5 and CC6;*
- e) Seeking the reduction of CO₂ emissions from buildings through the use of a fabric first approach and through provision of commercial and domestic scale renewable energy and decentralised energy as part of development proposals in appropriate locations. The Council will require all developments, either new build or conversions, with a combined floorspace of 500m² or more, or one or more residential units, to incorporate the fabric first approach and on-site renewable energy equipment to reduce predicted CO₂ emissions by at least 20%. If the percentage target is technically unfeasible, or can be proven to make the development financially unviable, off-site generation should be employed as an alternative approach; and*
- f) Supporting and promoting the implementation of Eco-Industrial Park (EcolP) principles within the A127 Enterprise Corridor*

2. The Council will seek to minimise the impacts of climate change on its communities through flood risk and drainage management that reduces the risk to people and properties from extreme flooding events.

- 2.4. The Plan sets out a suite of climate change related policies alongside Policy CC1, focusing upon specific adaptation and mitigation measures:

- **Policy CC2** 'Flood Risk and Drainage Management'
- **Policy CC3** 'Washlands'
- **Policy CC4** 'Managing Flood Risk in New Development'
- **Policies CC5 & CC6** 'Sustainable Buildings'
- **Policy CC7** 'Renewable Energy Infrastructure'

Local Plan Evidence Base

2.5. The evidence which was used to help inform the climate change strategy (Policy CC1) in the Local Plan include the following:

- Renewable Energy Options Topic Paper March 2017
- Renewable and Low Carbon Energy Constraints and Opportunities Assessment December 2015

Renewable Energy Options Topic Paper (March 2017)

2.6. This document was prepared to help inform the submission version (Regulation 19) of the Local Plan in regards to low carbon and renewable energy generation. It reviewed recent proposals for a Combined Heat and Power Plant/District Heating system at the site of Dunton Technical Centre and the application of 'eco-industrial park' principles at the Burnt Mills Industrial Estate. In addition, it considered representations received at the public consultation on the Draft Local Plan 2016 and recommended subsequent changes to climate change policies for the Submission Plan which were subsequently incorporated and formed part of the RPLP submitted in March 2019.

Renewable and Low Carbon Energy Constraints and Opportunities Assessment (December 2015)

2.7. This paper was prepared for the purposes of informing the Regulation 18 Draft Local Plan, consulted upon in 2016. The document sought to assess the opportunities and constraints for renewable and low carbon energy generation with Basildon Borough, which included:

- Onshore wind energy
- Solar arrays
- Biomass
- Microgeneration
- District Heating and Combined Heat and Power (CHP)

2.8. The assessment found that solar arrays, offshore wind turbines and microgeneration could provide the most electricity for the Borough via renewable sources. The assessment also suggested the inclusion of a target within the Local Plan for new development and conversions of existing buildings to incorporate a proportion of renewable and low carbon energy generation, providing a potential rate of 10-20% of CO₂ emissions from each development site. This recommendation was carried over into Policy CC1 of the submitted Plan, for new residential units and proposals with a combined floorspace of 500m².

Legislation and policy context on climate change

2.9. The Climate Change Act 2008 (as amended) sets a legally binding target to bring all GHG emissions to net zero by 2050. It also provides for the Committee on Climate

Change¹ to set out binding carbon budgets for 5-year periods. The first three carbon budgets aimed to achieve a 34 per cent reduction by 2020.

- 2.10. Section 182 of the *Planning and Energy Act 2008* amended Section 19 of the *Planning and Compulsory Purchase Act 2004*, requiring local planning authorities to set local plan policies for energy use and efficiency, as well as policies to ensure that new developments contribute to the mitigation of, and adaptation to climate change.
- 2.11. The 2019 National Planning Framework (NPPF) (paragraphs 8, 20, 148 -154 and 157) requires Local Planning Authorities (LPAs) to make a significant contribution to tackling climate change and supporting the transition to a low carbon future, taking full account of flood risk and coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures. Therefore, in order “to make a significant contribution to tackling climate change and supporting the transition to a low carbon future”, the focus should be on aiming for net zero GHG emissions for new builds, as any homes built now that do not reach this standard add to the size of the challenge to be net zero by 2050 at the latest.
- 2.12. The 25 Year Environment Plan (2018) and the emerging Environment Bill set out a framework to maintain and improve the environment for the next generation, with a focus on:
- Clean air;
 - Clean and plentiful water;
 - Thriving plants and wildlife;
 - A reduced risk of harm from environmental hazards such as drought and flooding;
 - Using resources from nature more sustainably and efficiently; and
 - Enhanced beauty, heritage and engagement with the natural environment.
- 2.13. The relevant key topics include connecting people with the environment to improve health and wellbeing; mitigating and adapting to climate change; minimising waste and air pollution; tree planting and woodland creation.
- 2.14. The Essex Green Infrastructure Strategy (2020) sets out how LPAs can protect, create, improve and connect GI to deliver multiple benefits, including combating Climate Change and improving the environment of Essex. Specific proposals relevant within the strategy are:
- Public realm green infrastructure improved to reduce pollution and improve character and sense of place;
 - Continue creating green spaces which also function as natural flood management and Sustainable Drainage System (SuDS) schemes;
 - Create green infrastructure in new developments; and
 - Use planning policy to secure multi-functional green spaces within and beyond development site boundaries.

¹ The Committee on Climate Change (CCC) is an independent, statutory body established under the Climate Change Act 2008 to advise the UK and devolved governments on emissions targets and to report to Parliament on progress made in reducing greenhouse gas emissions and preparing for and adapting to the impacts of climate change.

- 2.15. The Essex Design Guide (2018) highlights the importance of good design in ensuring that new homes meet the needs of residents now and in the future. It especially highlights the importance of ensuring that new homes are sustainable not only to benefit the environment, but also to ensure homes are efficient and people can afford to live in them. It also highlights the health and wellbeing benefits that can be derived through planning for green spaces and opportunities for active travel within development.

Reducing overheating in buildings

- 2.16. Paragraph 149 of the National Planning Policy Framework 2019 states:

*‘Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscape, and **risk of overheating from rising temperatures**. Policies should support appropriate measures to ensure the future resilience of communities and infrastructure to climate change impacts, such as providing space for physical protection measures, or making provision for the possible future relocation of vulnerable development and infrastructure.’*

- 2.17. Further guidance on climate change impacts is also set out in the Planning Practice Guidance (PPG). It states that addressing climate change is one of the core land use planning principles that the NPPF expects to underpin both plan-making and decision-taking and that, in order to be found sound, Local Plans will need to reflect this principle and enable the delivery of sustainable development in accordance with the policies in the NPPF. These include the requirements for local authorities to adopt proactive strategies to mitigate and adapt to climate change in line with the provisions and objectives of the Climate Change Act 2008, and to co-operate to deliver strategic priorities that include climate change.

Local standards for energy efficiency of new buildings

- 2.18. Standards for energy efficiency and carbon emissions in new buildings are governed by the building regulations regime, which is a separate process to the planning system. However, some local planning authorities (including Basildon Borough Council) have introduced their own standards for new buildings that are higher than the standards in building regulations in terms of energy efficiency and/or carbon emissions².

Role of Local Plans in Climate Change Mitigation and Adaption

- 2.19. The planning system is required to shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience, promote the reuse of existing resources, including the conversion of existing buildings and support renewable and low carbon energy and associated infrastructure. Policies are required to support appropriate measures to ensure the future resilience of communities and infrastructure to climate change impacts, promote walking, cycling and public transport, provide a positive strategy for the supply of renewable and low

² RPLP Policy CC1: Responding to Climate Change

carbon energy and heat by identifying sites for energy infrastructure and potential customers.

National climate change policy update (post March 2019)

2.20. There have been several major changes to the Government's national policy on climate change adaptation since the submission of the Basildon Local Plan in March 2019. These are summarised below:

UK 2050 'net zero' carbon target

2.21. In June 2019, the Government passed a 'net zero' carbon emissions law which requires the UK to bring all greenhouse gases to net zero by the year 2050, compared to previous targets of at least 80% reduction from 1990 emission levels. The 2050 target was recommended by the UK's independent climate advisory body, the Committee on Climate Change. Net zero means any emissions are balanced with schemes that offset an equivalent amount of greenhouse gases from the atmosphere, such as the planting of trees and the use of technology like carbon 'capture' and storage.

Future Homes Standard

2.22. Between October 2019 and February 2020, the Government held a consultation on changes to the standards in Parts L & F of the Building Regulations. These alterations are the first step in achieving the *Future Homes Standards*³. The *Future Homes Standard* will require new build homes to be future proofed with low carbon heating and achieve world-leading levels of energy efficiency. It is expected to be introduced by 2025.

2.23. The Government's consultation on *Future Homes Standards* set out two options for increasing energy efficiency requirements for new homes:

- **Option 1: 20% reduction** in carbon emissions compared to current standards for an average home. Potentially delivered by very high fabric standards (typically with triple glazing and minimal heat loss from walls, ceilings and roofs)
- **Option 2: 30% reduction** in carbon emissions compared to the current standard. Potentially delivered through the installation of carbon-saving technology such as photovoltaic (solar) panels and better fabric standards, though not as high as in option 1 (typically double not triple glazing).

2.24. The Government's preferred option is Option 2. This option would deliver more carbon savings and result costs for householders but has higher build costs. This may impact the current Local Plan policy CC1 1e) which currently requires 20% reduction in predicted CO2 emissions as opposed to 30% reduction proposed in Option 2 of the *Future Homes Standards*. This would be followed up by a further change to building regulations before 2025 that would see a prohibition on the use of gas for central heating, with low carbon heat replacing most of the need for heat (heat networks and heat pumps etc.) leading to a 75-80 per cent reduction in carbon emissions.

³ <https://www.gov.uk/government/consultations/the-future-homes-standard-changes-to-part-l-and-part-f-of-the-building-regulations-for-new-dwellings>

- 2.25. The Government is considering whether to commence section 43 of the Deregulation Act 2015 alongside changes to Building Regulations. Commencing section 43 would result in an amendment to the Planning and Energy Act 2008 that removes the power for Local Authorities to set energy efficiency standards in new development. However, commencing section 43 would not alter the remainder of the 2008 Act which grants powers to Local Authorities to require developments to provide a proportion of their energy usage from low and zero carbon sources.
- 2.26. In 2018, the Environmental Audit Committee (EAC) held an inquiry into heatwaves and their impact on the UK. In their final report, the EAC recommended that the Government should create a new regulation to prevent excessive overheating in new constructed buildings. The Government has responded to this recommendation by committing to consult on a methodology for reducing overheating risk in new homes. The consultation will address this commitment and include proposals to reduce the risk.
- 2.27. In total, five Building Regulations relating to Part L and Part F are expected to be updated during 2020. Whether these timeframes are realistic or not, there is likely to be reduced lead-in and consultation time compared to previous updates, in order to fit within Government's preferred timings. The dates corresponding to the Government's preferred option are set out below:

Date	Government's preferred option on timing
Late 2019/early 2020	Subsequent consultation on: <ul style="list-style-type: none"> • Overheating in new dwellings • Energy efficiency standards for work carried out in existing dwellings • Energy efficiency standards for non-residential buildings
Early/mid 2020	Publication of new Part L, Part F and overheating regulations, associated guidance and supporting analysed consultation response document.
Mid/late 2020	Part L, Part F and overheating regulations come into force.

National Design Guide 2019

- 2.28. The government's Design Guide was published on October 2019. It echoes established good design practice for new development in regards to climate change adaptation. The guide states that well-designed places and buildings should:
- mitigate climate change, primarily by reducing greenhouse gas emissions by minimising energy need through design and energy efficient materials and meeting residual energy need from low carbon sources in line with the energy hierarchy,
 - minimise embodied energy and carbon through the use of low carbon materials and the reuse of existing buildings,

- are fit for purpose and adaptable over time, reducing the need for redevelopment and offering resilience to prevailing and forecast environmental conditions, **with regard to overheating and the 'heat island' effect,**
- use innovative techniques and smart technologies including off-site manufacture of buildings and components and digital infrastructure, where appropriate.
- include green and blue spaces that help to cool built areas and provide flood alleviation, and
- conserve water through rainwater harvesting or grey-water systems.

Recommendations for Policy Modifications – Climate Change Adaptation:

- 2.29. When considered against the matters identified above, the RPLP Policy CC1: Responding to Climate Change does not fully address issues of climate change adaptation and does not provide sufficient detail to address overheating in new dwellings and the 'heat island' effect. The policy may also be strengthened further by acknowledging the role of GI, and mitigating and adapting to climate change impacts.
- 2.30. Furthermore, the Future Homes Standards proposals contain tighter requirements for CO₂ emissions reductions compared to the requirements stipulated in the RPLP Policy CC1. Alongside the prospects of commencement of section 43, which removes the power for Local Authorities to set energy efficiency standards in new development, both may impact the submitted RPLP **Policy CC1 1e)** which currently sets out energy efficiency requirements of at least 20% reduction in predicted CO₂ emissions against minimum requirements set out in Part L of the Building Regulations. Thus a degree of flexibility in wording of the Policy CC1 would need to be provided to accommodate the possibility of the above changes. It is therefore recommended that Policy CC1 to be modified to reflect the constraints.

Proposed Policy CC1 Modifications

Policy CC1: Responding to Climate Change

1. The Council will seek to reduce carbon emissions, and the impacts of the Borough on climate change by encouraging greater levels of sustainability through development, supporting climate change adaptation, and by putting measures in place that encourage individuals within the community to be more sustainable. This will be achieved by:

- a) Identifying development locations with good access to services and public transport provision;*
- b) Working with partners to deliver improvements to public transport and active travel modes as set out in policies T3 and T4;*
- c) Working with partners and developers to deliver multi-functional green infrastructure as set out in policy NE1;*
- d) Seeking high quality sustainable design of new homes, commercial and industrial buildings that promotes energy, thermal and water efficiency and opportunities for natural cooling as set out in policies CC5 and CC6;*

- e) *Seeking the reduction of CO₂ emissions from buildings through the use of a fabric first approach and through provision of commercial and domestic scale renewable energy and decentralised energy as part of development proposals in appropriate locations;*
- f) *Supporting and promoting the implementation of Eco-Industrial Park (EcoIP) principles within the A127 Enterprise Corridor.*
- g) *Seeking the reduction in the urban heat island effect by consideration of public realm and building surface materials and the role of green infrastructure ⁴such as green roofs, green walls, increased tree cover and waterways;*
- h) *Requiring buildings to be designed and constructed to provide for the comfort, health, and wellbeing of current and future occupiers over the lifetime of the development, covering the full range of expected climate impacts and with particular regard to overheating; and*
- i) *Developments that are likely to accommodate vulnerable people, such as schools and care homes, should demonstrate that their specific vulnerabilities have been taken into account with a focus on overheating.*
2. *The Council will require all developments, either new build or conversions, with a combined floorspace of 500m² or more, ~~or one or more residential units~~, to incorporate the fabric first approach and on-site renewable energy equipment to reduce predicted CO₂ emissions by at least 20%. If the percentage target is technically unfeasible, or can be proven to make the development financially unviable, off-site generation should be employed as an alternative approach. *If offsite generation is employed, it should remain as local as possible to the site so that the benefits are maintained within the locality. If on site renewable energy cannot be achieved then a renewable strategy should be provided to demonstrate how it could be achieved in the locality.**
- Where new national standards exceed those set out above, the national standards will take precedence.*
3. *The Council will seek to minimise the impacts of climate change on its communities through flood risk and drainage management that reduces the risk to people and properties from extreme flooding events.*

⁴ **Green infrastructure** can provide wider climate change benefits other than the creation of microclimate for reducing the urban heat island effect. This include but not exhaustive:

- Flood water management - managing surface water through naturalise solutions;
- Creating microclimates - managing high temperatures;
- Carbon storage and sequestration – storing carbon in soils and vegetation;
- Providing local recreation areas and green travel routes to encourage walking and cycling;
- Managing visitor pressure – providing a recreation and visitor resource for a more outdoors lifestyle and helping to divert pressure from landscapes which are sensitive to climate change; and
- Reducing soil erosion – using vegetation to stabilise soils that many be vulnerable to increasing erosion.

Part 2: Air Quality

Introduction

- 3.1. Air pollution is a growing issue across the UK particularly within urban areas. There is a growing body of evidence that links poor air quality to health concerns amid populations and environmental damage. The young, elderly and those with pre-existing medical conditions such as heart and lung problems are most susceptible to poor air quality. It is not necessarily the case that air quality which complies with the relevant UK Air Quality Objectives would not result in any adverse health effects, and it is widely acknowledged that for some pollutants there is no threshold below which health effects are not observed (i.e. PM₁₀/PM_{2.5}). The presence of particulate matter (PM) in the air is of increasing concern – this stems from the wear of tyres and are unrelated to engine emissions so even the take-up of ‘clean’ automobiles will not limit the build-up of these pollutants.
- 3.2. There is also increasing evidence that shows adverse health outcomes at the population level for annual average concentrations of Nitrogen Dioxide (NO₂) which are well below the UK Air Quality Objective value.

Basildon Local Plan policies

- 3.3. The main policy on air quality in the Basildon Local Plan is Policy NE6: ‘Pollution Control and Residential Amenity’:

Policy NE6: Pollution Control and Residential Amenity

1. *All development proposals must be located and designed in such a manner as to not cause a significant adverse effect upon the environment, the health of residents or residential amenity by reason of pollution to land, air or water, or as a result of any form of disturbance including, but not limited to noise, light, odour, heat, dust, vibrations and littering.*
2. *New residential and office development, and other forms of development which may be sensitive to excessive exposure to noise, light, odour, heat, dust or vibrations, located near to existing pollutant noise, odour or light generating uses will be expected to demonstrate that the proposal is compatible, and will not result in unacceptable living standards. Such sensitive uses will not normally be permitted within 250m of uses such as, but not limited to, combustion operations, incinerators, composting operations, anaerobic plants, existing landfill operations, and intensive pig and poultry installations.*
3. *The installation of Sustainable Drainage Systems should be incorporated wherever practical to reduce the discharge of surface water to the sewer network, in order to minimise impacts on water quality, in accordance with policy CC4.*
4. *Planning conditions may be used to manage and mitigate the effects of pollution and/or disturbance arising from development. Where required, conditions limiting hours of construction, opening hours and the movement of construction traffic, and placing requirements on applicants to submit*

further proposal details will be implemented in order to ensure impacts on the environment and residential amenity are kept within acceptable limits and where possible reduced both during construction and during ongoing use and occupation.

3.4. Air quality matters have also been addressed in the Plan via a range of policy mechanisms, including:

- Prioritising development in areas with access to services and walking/cycling routes to reduce need to travel by private car (Policy SD2);
- Encouraging new developments to provide sufficient walking and cycling infrastructure (Policy T1);
- Encouraging the development of electric car charging infrastructure (Policy T10); and
- Requiring the assessment of air quality impacts in transport assessments/statements accompanying planning applications (Policy T7).

3.5. In addition, certain site allocations for housing located close to high concentrations of particulate matter and/or nitrogen dioxide have been phased for delivery later in the plan period (after 2022) in order to allow for time to reduce these concentrations to levels below the legislative limits in the interests of public health.

Local Plan Evidence base

3.6. The Air Quality Topic Paper 2017 helped inform the Local Plan's approach to improving the air quality in the Borough as well as mitigating the air quality impacts of new development, particularly in areas where there were recorded exceedances over legal concentration limits for particulate matter and nitrogen dioxide.

Legislation and policy context on air quality

3.7. UK legislation on air quality is led by the 2008 Ambient Air Quality Directive. This sets legally binding limits for concentrations in outdoor air of major pollutants impacting upon public health such as particulate matters and nitrogen dioxide. As well as having direct effects, these pollutants can also form ozone, a greenhouse gas, within the atmosphere and thus contribute towards climate change.

3.8. The Council has a duty under the Environment Act 1995; Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance, to regularly review and assess air quality and to determine whether or not the air quality objectives are likely to be achieved.

3.9. The Government have also recently published their new Clean Air Strategy 2019 and proposed a new Clean Air (Human Rights) Bill (HL Bill 118). Any developing changes in national policy deemed to influence the Council's approach to improving air quality will need to be considered.

National Planning Policy Framework (NPPF)

3.10. Paragraph 181 of NPPF (February 2019) states:

“Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas...”

- 3.11. Para 181 of NPPF 2019 goes on to say: “...Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement.” This part of the NPPF suggests that the policy should also seek opportunities to improve air quality, and is not limited to purely preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution as per Para 170 e) which also implies that planning policies should, wherever possible, help to improve local environmental conditions such as air quality. Furthermore, a recently updated air quality guidance of 4th November 2019 seeks to secure net improvements in overall air quality where possible. The guidance also says that plan-makers should take account of “Clean Air Zones and other areas including sensitive habitats or designated sites of importance for biodiversity.

Background to Air Quality Management Plan (AQMP) proposals for Basildon

- 3.12. On 26 July 2017, the Government published the UK Plan for tackling roadside Nitrogen Dioxide (NO₂) concentrations (“The UK Plan”). This set out how the Government would bring UK NO₂ concentrations within the statutory annual limit of European Union (EU) Air Quality Directive limit value of micrograms per cubic metre (µg/m³) in the shortest possible time.
- 3.13. Department for the Environment, Food and Rural Affairs (DEFRA) and the Department for Transport’s Joint Air Quality Unit (JAQU) oversee the delivery of The UK Plan by supporting Local Authorities with the delivery of local Air Quality Management Plan (AQMP) in their area through identifying appropriate measures, which would then be included in the AQMP and delivered by the Local Authorities. To this end, Local Authorities need to undertake local assessments to develop an option for the AQMP that will achieve likely compliance within the shortest possible time.
- 3.14. In July 2017, DEFRA issued Basildon Council a Direction in respect of the Air Quality Framework Directive⁵. The Direction required the preparation of an Air Quality AQMP to address two recorded exceedances in NO₂ levels on the A127 identified by the Pollution Climate Mapping (PCM) model. The PCM model predicted two locations along the A127 route in Basildon likely to continue to exceed the NO₂ annual mean EU Limit Value of 40 µg/m³ beyond 2020.
- 3.15. A subsequent more detailed local modelling conducted by Essex County Council in conjunction with Ringway Jacobs in 2018 and 2019 identified two points of exceedance at the Noak Bridge Junction and an additional point of exceedance at A127/A132 Nevendon Interchange. To address NO₂ exceedances at these locations, a business

⁵ Directive 2008/50/EC on ambient air quality and cleaner air for Europe: <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1486474738782&uri=CELEX:02008L0050-20150918>

case for the implementation of a preferred AQMP was submitted to DEFRA in May 2019⁶. The business case explored three main mitigation packages:

- Speed limit reduction scheme along the A127⁷
- A non-charging Clean Air Zone (CAZ)
- A charging CAZ

3.16. The preferred AQMP to address NO₂ exceedances included the speed limit reduction scheme on the A127 in combination with a non-charging CAZ.

Local Plan Post-submission evidence on air quality

Planning Practice Guidance (PPG)

3.17. The PPG on Air Quality was revised on 1 November 2019⁸. It advises authorities that consideration of air quality during plan-making can ‘help secure net improvements in overall air quality where possible’. Assessments of changes in air quality during the construction and operational phases of proposed development should include ‘the consequences of this for public health and biodiversity’. Consideration should also be given to ‘Clean Air Zones and other areas including sensitive habitats or designated sites of importance for biodiversity.’

DEFRA Ministerial Direction on Air Quality, June 2019

3.18. On 17th June 2019, following the submission of a preferred AQMP to DEFRA in May 2019 and shortly after submitting the Local Plan for Examination in Public in March 2019, Basildon Council received a Direction from DEFRA requiring urgent improvements to air quality in locations around the A127 road, consistent with requirements of the (EU) Air Quality Directive.

3.19. The Direction stated that addressing the known concentrations of nitrogen dioxide along the A127 were a matter of urgency and that they must be reduced in the shortest possible timeframe. In order to achieve this, DEFRA instructed the Council to support the implementation of a lowered speed limit along the A127 in the Borough. In addition it required to undertake further air quality and transport modelling to demonstrate what measures would need to be implemented to deliver compliance quicker than 2023 at the exceedance locations at East Mayne including consideration of a small charging CAZ and/or access restriction (charge or ban) for HGVs⁹ so to reduce the identified concentrations of pollutants in the Borough by mid-2020 (instead of 2021 as set out in the submission version of the Plan).

3.20. In response to the Direction, Basildon Council requested for a suspension of the Examination in Public for the Local Plan until sufficient evidence on addressing the air quality improvements had been prepared by the Highways Authority and approved by

⁶ Outline Business Case (ECC, May 2019):

<http://www.basildonmeetings.info/documents/s103054/LOCAL%20AIR%20QUALITY%20MINISTERIAL%20DIRECTION%20-%20APPROVAL%20OF%20OUTLINE%20BUSINESS%20CASE%20enc.%202.pdf>

⁷ A 50mph speed limit along the A127 from the Fortune of War Junction to Pound Lane Junction.

⁸ <https://www.gov.uk/guidance/air-quality--3>

⁹ Defra Direction (June 2019):

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/813209/air-quality-direction-basildon-2019.pdf

DEFRA. Responding to the instructions in the Direction, Basildon Council submitted additional modelling in relation to a Clean Air Zone scenario (both charging and non-charging) in July 2019 and in October 2019 submitted a business case for a speed limit reduction along the A127, in partnership with the highways authority at Essex County Council. Since then, a speed limit reduction along the A127 was rolled out in March 2020. However, in regards to a CAZ scenario, the Council is awaiting a response from DEFRA on whether a CAZ will be imposed by the Government. Currently, it is unknown whether the suite of additional measures required to deliver compliance will include the non-charging measures modelled in the original business case prepared by ECC, a small charging CAZ, access restrictions or a combination of these additional schemes. Once further clarity from DEFRA is received, it will inform the choice of the preferred option for the AQMP.

- 3.21. Measures contained in an AQMP, including potential introduction of CAZ, will in turn form a new evidence that will be utilised and will have to be considered by all new developments in the borough. Further modifications may be required to the Local Plan to reflect the emerging new evidence and thus acknowledging the importance of the developer's contribution towards implementation of the AQMP objectives and measures is necessary, once they are finalised.

Clean Air Zones

- 3.22. Clean Air Zones (CAZ) are defined areas where targeted action is taken to improve air quality and resources are prioritised in order to shape the urban environment in ways which deliver improved health benefits and supports economic growth.
- 3.23. Clean Air Zones aim to address all sources of pollution, including nitrogen dioxide and particulate matter, and reduce public exposure to them using a range of measures suited to the particular location. Within CAZ there is also particular focus upon measures to accelerate the transition to a low emissions economy, support future development and decoupling local growth from air pollution.
- 3.24. There are two main types of CAZ – charging and non-charging. In a charging CAZ, drivers of vehicles that do not meet the emission standards for that zone are required to pay a charge to enter and move within the zone.
- 3.25. Clean Air Zones are adopted and managed outside of local planning functions however their objective of reducing pollution within a defined area has implications upon site allocations or planning policies relating to that area. The NPPF recognises the need for planning policies to take account of CAZs and the cumulative impacts from individual sites.
- 3.26. Basildon Council has supported establishing a Clean Air Zone near to the A127 in order to strengthen measures in reducing excess of air pollutants in that location. The Council favours a non-charging CAZ, believing that the charging option would cause adverse harm to the businesses situated next to the A127 and also adversely impact upon the A13 stretch within the Borough, which may have increased traffic due to drivers avoiding the vehicle charges.

- 3.27. The A127 corridor is a key area for future development and growth in the Borough during the Plan period. The strategic site allocations of Dunton Technical Centre (Policy E3), Burnt Mills East (Policy E6), Gardiners Lane (Policies E5 & H5), Steeple View (Policy H9) and Noak Bridge (Policy H10) are located adjacent to the A127. Many of the Borough's established industrial estates, as well as the Festival Retail and Leisure development, are also adjacent to A127. Broad locations for future housing growth in between Basildon and Wickford and at Crays Hill has been identified through the Local Plan, subject to further proposed infrastructure improvements along the A127. The concentration of site allocations along the A127 means that the impact of a CAZ, whether charging or non-charging, needs to be fully taken into account and the policies amended in order for them to be consistent with the objectives of CAZ.

Basildon Local Plan Air Quality Review May 2020

- 3.28. Essex County Council in partnership with consultants Ringway Jacobs published a review of the policies in the Local Plan relating to controlling air quality in May 2020. The review found that the coverage of air quality issues in the Plan to be robust however there were some areas of concern identified:

- Improvements to the highways infrastructure could lead to increased traffic flows and divert people away from using public transport and set back other initiatives to reduce private car use, which may have adverse air quality impacts in the shorter term. This would become less of an issue over the longer term where NO₂ concentrations would be expected to be much lower than current levels due to the much higher proportion of electric vehicles in use¹⁰.
- Although the policies place obligations on the developments to provide sufficient mitigation, this may not be practicable or the costs may be prohibitive.
- Some developments will need to be carefully considered where housing and employment uses are located close together.
- Adequacy of policies to require developers to make provision for electric vehicle charging infrastructure, including the types of fast or slow charging, and the potential constraints faced by the developer.
- Limited consideration of some non-transport related sources such as domestic solid fuel burning which accounts for a high proportion of PM_{2.5} emissions.
- There appears to be limited consideration at a strategic level of the potential for decentralised energy to support the proposed housing and employment allocations.
- Although the Local Plan sufficiently considers the individual impact of development, there is no apparent consideration or highlighting of the potential cumulative air quality impact of all the developments as required by the NPPF / PPG, or of the potential implications for the A127 and Clean Air Zone.

¹⁰ It is worth noting that non-exhaust particulate emissions from road vehicles such as private cars currently account for over 80% of the total particulate emissions from traffic, and this proportion will increase as exhaust particulate emissions continue to be reduced through stricter emissions standards. Electric vehicles (EVs) are on average heavier than their internal combustion engine vehicles (ICEVs) counterpart and are likely to emit higher levels of particulates. As such, EVs will continue to contribute to particulate matter (e.g. PM₁₀ and PM_{2.5}) related air quality and health issues into the future. National and local polices should be considered in order to tackle these sources of emissions. <http://www.soliftec.com/NonExhaust%20PMs.pdf>

Recommendation 1 for Policy Modifications – Air Quality:

- 3.29. It is recommended, due to significant material considerations that have emerged since submission of the RPLP, that a new policy on air quality should be included in the Local Plan, in addition to the existing Policy NE6: Pollution Control and Residential Amenity. This policy would give greater consideration to the measures contained in the Air Quality Management Plan (AQMP), including potential inclusion of CAZ and other areas, and seek net improvements in the overall air quality where possible.

Emissions from biomass technology

- 3.30. Biomass technologies are the decomposition of organic matters from plants, animals, forestry and agricultural residues, as well as organics compounds of municipal and industrial waste products, to release stored energy to use as fuel.
- 3.31. The deployment of biomass technologies is part of the wider initiative to move towards establishing a low carbon economy and thus contributes towards adapting to climate change. However, there is concern that the burning of biomass fuels disperses quantities of particulate matter as well as nitrogen dioxide, which impacts negatively upon air quality.
- 3.32. The Air Quality Expert Group, on behalf of DEFRA, published a report in 2017 that examined the air quality impacts of biomass combustion.¹¹ The report stated that much of the potential impact upon air quality comes from scale domestic burning of biomass material (e.g. wood), which is difficult to estimate in terms of emissions. Available ambient measurements of emissions caused by wood burning in urban areas during winter months indicate that a considerable proportion of these emissions (up to 25%) contain particulate matter.
- 3.33. Biomass technology deployment within areas of known poor air quality, such as the A127 corridor, may continue to raise the level of pollutants beyond the legal limits. The Basildon Local Plan supports the development of several renewable energy projects within the Borough through Policy CC7 'Renewable Energy Infrastructure', one of which is a Combined Heat and Power (CHP) plant at Dunton. The Renewable and Low Carbon Energy Options Topic Paper 2017 stated that the CHP proposal would likely have an impact upon local air quality, dependent upon the type of technology employed and the fuel type burned at the plant. It was recommended that a CHP proposal should be subject to a detailed assessment of the plant's emissions.

Policy Modification Recommendation 2 – Air quality impacts of solid fuel burning:

- 3.34. As part of a new policy on air quality as introduced in Recommendation 1, it is considered that the cumulative air quality impacts from new developments and the

¹¹ 'The Potential Air Quality Impacts from Biomass Consumption' Air Quality Expert Group & DEFRA, 2017 https://uk-air.defra.gov.uk/assets/documents/reports/cat11/1708081027_170807_AQEG_Biomass_report.pdf

impacts from non-transport related sources of air pollution, such as domestic solid fuel burning, should be appropriately managed in the Plan.

Basildon Local Plan Sustainability Appraisal Second Addendum 2020

- 3.35. In February 2020, the Council commissioned LUC to prepare a second addendum to the Local Plan Sustainability Appraisal (SA). The SA Addendum 2020 was prepared to take into account changes to the baseline evidence in relation to air quality issues. Three objectives in the SA appraise the likely impact of the Local Plan on traffic congestion and air quality issues.
- 3.36. The SA Addendum reported that several land allocations in the RPLP were in reasonably close proximity to the NO₂ exceedance points identified by DEFRA requiring urgent action. These were identified as:
- Policy E2 Existing Employment Areas for General B Class Uses
 - Policy H4 New Gypsy and Traveller Pitch and Travelling Showpeople Plot
 - Policy H10 Noak Bridge Junction
 - Policy E5 & H5 Land South of Gardiners Lane South, Basildon
- 3.37. The recommendation from the SA addendum is to include further policy requirements in the Local Plan preventing the commencement of development on these sites until NO₂ levels at the identified points have been brought below the statutory limits, in order to avoid significant adverse effects in regards to air pollution.

Policy Modification Recommendation 3 – Site Specific Air Quality Mitigation:

- 3.38. It is recommended to amend the current wording of the four policies specified below to ensure that the commencement of new development will not be permitted until the NO₂ levels at the identified points have been brought below the statutory limits. This applies to the following sites/policies:
- Policy E2 Existing Employment Areas for General B Class Uses
 - Policy H4 New Gypsy and Traveller Pitch and Travelling Showpeople Plot
 - Policy H10 Noak Bridge Junction
 - Policy E5 & H5 Land South of Gardiners Lane South, Basildon
- 3.39. The wording contained below is recommended to be inserted within these four policies for the purposes of maintaining a consistent approach in tackling NO₂ levels throughout the document:

'In order to ensure residents/occupants of this development are not exposed to unsafe air quality, development on this site must not come forward until such time as air quality within the vicinity of the site has been shown to be within statutory limits for NO₂.'

- 3.40. Furthermore, in order to address the possibility of new NO₂ levels exceedances, emerging as a result of the proposed traffic diversions during the Plan period, it is recommended to include some general provisions in the new air quality policy, which could be applicable to the Plan as a whole and are not limited to only four policies specified above. This will likely to provide some flexibility in the Local Plan to address

any future NO₂ exceedances points and their likely effects on air quality and public health.

- 3.41. There is also need to emphasize the important role that GI can play in providing separation (by barrier and/or distance) of receptors from sources of air pollution. GI can also improve the public realm through the use of appropriate design and vegetation species to reduce air pollution and for carbon storage. Different types of trees will affect air temperature, radiation absorption and heat storage, wind speed, relative humidity, turbulence, surface albedo and mixing-layer height. Depending on the tree species it will vary over the year in their value to mitigate air quality, such as deciduous trees. These are important factors regarding pollution mixing and the benefits to reduce air pollution.¹²
- 3.42. Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) have produced 'Land-Use Planning & Development Control: Planning For Air Quality January 2017' guidance to ensure that air quality is adequately considered in the land-use planning and development control processes. It focuses on development control, but also stresses the importance of having good air quality policies within local authority planning frameworks. The guidance is particularly applicable to assessing the effect of changes in exposure of members of the public resulting from residential and mixed-use developments, especially those within urban areas where air quality is poorer.
- 3.43. Separate guidance has been published by IAQM i.e. 'Guidance on the assessment of odour for planning July 2018' and 'Guidance on the assessment of dust from demolition and construction January 2014' and these guidance documents should be consulted as appropriate.
- 3.44. It is therefore recommended that the reference to the suite of technical guidance documents produced by the Institute of Air Quality Management (IAQM) is to be included in the Policy NE6 (1) and the Council to require the developer to demonstrate conformity with the IAQM guidance documents and any future revisions of that guidance. Further reference should be made to DEFRA's LAQM Technical Guidance TG (16) (also referenced in the EPUK guidance) and any other relevant guidance or standards.
- 3.45. It is also recommended that during the construction phase, an assessment of potential impacts to be carried out in accordance with the IAQM document 'Guidance on the Assessment of Dust from Demolition and Construction' (2014). Appropriate mitigation measures should be recommended based on the identified level of risk and significance of impacts occurring.

¹² Planting trees is an important part of accelerating the drawdown of carbon from the atmosphere and contributing towards the 'net zero' goal that the UK is committed to. The Government has plans to plant 30,000 ha a year of trees by 2025 and propose to rerun the Urban Tree Challenge. A combination of trees and hedging are most effective at reducing pollution exposure and cutting back carbon.

Proposed New Policy NE6 (1): Air Quality

Policy NE6 (1): Air Quality

1. The Borough's air quality should be significantly improved and exposure to poor air quality, especially for vulnerable people, should be reduced. The Council will ensure that the impact of development on air quality is mitigated and that proposals do not negatively impact on existing air quality levels in the Borough. To achieve this, all development proposals should not:
 - a) lead to further deterioration of existing poor air quality;
 - b) create any new areas that exceed air quality limits, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits;
and
 - c) create or increase unacceptable risk of high levels of exposure to poor air quality in the interests of protecting public health.
2. Development proposals which are in close proximity to the points of NO₂ exceedance will be expected to come forward only after the known exceedances in NO₂ have been managed through measures specified in the most up-to-date Air Quality Management Plan (AQMP). Developers are expected to provide sufficient evidence on how their proposal would not increase the presence of air pollutants in the vicinity.
3. Development proposals should use design solutions, such as the use of green infrastructure, to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality. In the event that the Council introduces CAZ or similar, particular care should be taken with developments that are in these areas or any areas that are likely to be used by large numbers of people particularly vulnerable to poor air quality, such as children or older people.
4. New developments that are classed as major development and have the potential, either individually or cumulatively, for significant air quality impacts will be required to be at least air quality neutral and be submitted with an Air Quality Assessment (AQA)¹³.
5. Development that involves significant demolition, construction or earthworks will also be required to assess the risk of dust and emissions impacts in an AQA and include appropriate mitigation measures for controlling dust and emissions from plant and machinery. During construction phase an assessment of potential impacts shall be carried out in accordance with the Institute of Air Quality Management (IAQM) document 'Guidance on the Assessment of Dust from Demolition and Construction' (2014). Appropriate mitigation measures should be recommended based on the identified level of risk and significance of impacts occurring.
6. The Council will not support the deployment of biomass technology in new development in the areas already subject to poor air quality. The Council will only support the deployment of biomass technology in locations off the gas grid where coal and oil-fired plant are currently used and where no cleaner feasible alternative is available. Permission should only be granted if no adverse air quality impacts from the biomass boiler are identified.

¹³ All Air Quality Assessments should follow the 'Local Air Quality Management Technical Guidance (TG16) (February 2018)' and any future revisions of this guidance. The document can be found at <https://laqm.defra.gov.uk/technical-guidance/index.html?d=Chapter71>.

7. The Council will require development to demonstrate conformity with the Institute of Air Quality Management guidance 'Land-Use Planning and Development Control: Planning for Air Quality' (2017) and any future revisions of that guidance.