Local Development Framework – Core Strategy

Issues and Options Discussion Paper

Topic Paper 8 – Climate Change & Decentralised Energy

1.00 Background

Policy / Guidance Document

- Planning Policy Statement 1: Delivering Sustainable Development
- Planning Policy Statement 1 Supplement: Planning and Climate Change
- Planning Policy Statement 22: Renewable Energy
- Planning for Renewable Energy: A Companion Guide to PPS22
- Draft National Planning Policy Framework (NPPF)
- North West Regional Spatial Strategy
- Mini Stern Report
- AGMA Decentralised and Zero Carbon Energy Study
- Greater Manchester Low Carbon Economic Area
- Tameside Decentralised Energy Study
- Greater Manchester Climate Change Strategy

1.01 Globally there is a broad recognition that the earth's climate is changing, with increases in global temperatures and more erratic weather patterns resulting in irreversible changes to eco systems and environments across the planet.

1.02 The principle cause of climate change is human activity and particularly man-made emissions; carbon dioxide being one of the primary problems. Whilst we cannot undo the damage done to date, there is a need to substantially reduce our emissions and in turn the severity of climate change.

1.03 In response to this and commitments agreed at the Kyoto Summit, The Government has committed to reduce carbon dioxide emission to 80% below 1990 levels by 2050. These commitments, highlighted within the Climate Change Act 2008 have filtered down through national policies and strategies, with existing and future planning policy and building regulations playing a key role in achieving these targets.

2.00 National Perspective

<u>Planning Policy Statements 1 & 22</u>

2.01 Nationally the previous Government outlined its commitment to sustainable development, climate change and the promotion of renewable energy through Planning Policy Statements (PPS) 1 and 22.

2.02 PPS 1: Delivering Sustainable Development, together with its supplement; Planning and Climate Change, details the current national guidance and policies on how the planning system / local planning authorities should steer the creation of sustainable developments

and plan for the effects and mitigation of climate change. Linked with the PPS 1 supplement, PPS 22: Renewable Energy, requires local development documents to promote and encourage the development of renewable energy resources. Through local development documents local authorities should make provision for:

- Renewable energy developments should be capable of being accommodated throughout England in locations where the technology is viable and environmental, economic, and social impacts can be addressed satisfactorily.
- Local development documents should contain policies designed to promote and encourage, rather than restrict, the development of renewable energy resources.
- Planning authorities should set out the criteria that will be applied in assessing applications for planning permission for renewable energy projects.
- Planning policies that rule out or place constraints on the development of all, or specific types of, renewable energy technologies should not be included in local development documents without sufficient reasoned justification.
- The wider environmental and economic benefits of all proposals for renewable energy projects, whatever their scale, are material considerations that should be given significant weight in determining whether proposals should be granted planning permission.
- Local planning authorities should not make assumptions about the technical and commercial feasibility of renewable energy projects. Technological change can mean that sites currently excluded as locations for particular types of renewable energy development may in future be suitable.

2.03 Adopting local policies that reflect the above principles will play a key role in enabling the development of renewable energy sources, as either stand alone developments or as ancillary energy sources to developments.

2.04 Allied with these national planning policies is the stepped tightening of Part L of the Building Regulations that requires the improved efficiency of new buildings, reducing their carbon emissions. This stepped tightening will lead to the creation of zero-carbon dwellings by 2016, and zero-carbon non-dwellings by 2019.

Draft National Planning Policy Framework

2.05 The Government's intention is to replace the current suite of planning policy statements and guidance (including PPS 1 & 22) with a single national planning document, the National Planning Policy Framework (NPPF). The consultation draft of this document was published in July 2011 which at its 'heart' has a 'presumption in favour of sustainable development'.

2.06 While the current planning policy statements remain in place (as at September 2011), it is the content of the NPPF (once adopted) that will guide policies in the Tameside Core Strategy.

2.07 In relation to climate change and decentralised energy, the NPPF highlights the Government's objective that 'planning should fully support the transition to a low carbon economy in a changing climate'.

2.08 Key elements of this support include:

- planning for new development in locations and ways which reduce greenhouse gas emissions

- adopt nationally described zero carbon building standards
- promote energy from renewable and low-carbon sources
- design policies to maximise renewable and low-carbon energy development
- consider identifying suitable areas for renewable and low-carbon energy sources
- identify opportunities where development can draw its energy supply from decentralised, renewable or low carbon energy supply systems
- use opportunities offered by new development to reduce the causes and impacts of flooding

3.00 Local Perspective

North West RSS

3.01 In response to national planning policy surrounding climate change and decentralised energy (PPS1 & 22), the North West Development Agency through its Regional Spatial Strategy established policies and targets for reducing energy consumption and sourcing electricity from renewable energy sources. In aiding the promotion of decentralised energy, the RSS contained a policy requiring non residential developments over 1000m^2 and residential developments of 10 units or more to secure at least 10% of their predicted energy requirements from decentralised and renewable or low carbon sources.

3.02 These RSS policies established a regional interpretation of the national policies, which many local authorities used as the basis for localised climate change and decentralised energy policies in their core strategies. However, the Government's intention is to revoke regional spatial strategies through the Localism Act rendering policies contained within them void.

3.03 With this pending gap in local policy and changes at national level, it's important that Tameside understands its potential for decentralised energy and establishes a direction for future policies to aid climate change adaptation and reduce carbon emissions within its Core Strategy.

Mini Stern Report (2008)

3.04 Manchester Enterprises and North West Development Agency commissioned Deloitte to undertake a study (building on the 2006 national Stern Review, a comprehensive review on the economics of climate change) to assess the economic impact of EU and UK climate change legislation, regulation and policies on the Manchester City Region. The resulting 'Mini-Stern' report focused on what the region could do in the short to medium term to develop strategies to respond to the impact of new climate change legislation.

3.05 The report clearly highlights that the climate change agenda is defining new legislative and policy agenda across the globe. Its impact on the Manchester City region could be profound, with potential loss of £20bn to the economy over the next 12 years if it fails to adapt. Yet there is also significant economic opportunity for the City Region if it takes early action.

3.06 In order to help realise this opportunity the report identifies the following broad strategic priorities for the Manchester City Region:

- *Exploiting first mover advantage* – a clear policy position is needed. Go with the flow or be at the forefront – 'first mover advantage'.

- *Leadership aimed at building on international reputation* – strong leadership backed by co-ordinated programmes of action.

- *Transforming the energy mix to reduce economic cost* – develop a robust and cost efficient energy infrastructure based on low and zero carbon technologies. Spatial planning will be a critical tool in shaping this.

- *Promoting sector growth through targeted procurement strategies* – public sector will have a critical role supporting the growth of products and services through procurement.

- *Reducing uncertainty and risk to encourage business investment* – influencing national policy should be a major focus here. Businesses need to believe they're investing in change for the right reasons and not burdened with unnecessary costs.

- *Delivering coherent advice and support to business in general* – targeted business support to aid business community mitigate and deliver the economic benefits.

- *Developing sector strategies* – to support vulnerable sectors as well as developing opportunity sectors.

- *Promoting inward investment* – once leadership is established and key programmes are in place, Manchester Investment Development Agency Service (MIDAS) would be in a good position to promote Manchester internationally for Climate Change related innovation activity.

- *Policy Alignment* – of spatial and economic policies across the City Region can aid consistency and avoid internal competition.

- *Investing in skills and building capacity* – ensuring future employment demands are met in the region to help enhance the creation and development of new technology clusters.

<u>AGMA Decentralised and Zero Carbon Energy Study</u>

3.07 In response to the recommendations / strategic priorities of the Mini-Stern Report, the Association of Greater Manchester Authorities (AGMA) commissioned consultants to undertake the Greater Manchester Decentralised and Zero Carbon Energy Study.

3.08 The study focuses on how the City Region can reduce carbon emissions through the delivery of decentralised energy infrastructure and development of zero carbon buildings.

3.09 The plan focuses on strategic City Region approach, together with specific case studies of development in order to explore the potential for spatial energy planning at a number of scales.

3.10 Through site specific case studies the study highlighted the following energy opportunity areas:

- *Micro-generation areas* – planning requirements, market development initiatives and guidance for lower density homes.
- *Ship Canal corridor* – development of a heat pipe line between Carrington power station and the regional centre to serve the corridor.
- *Town centre networks* – district heating and cooling networks in and around at least 8 town centres.
- *Biofuel supply chains* – strategic development, including sites for processing and storage served by road & rail.
- *Regeneration retrofit areas* – district heating and large scale micro-generation as an integral part of major retrofit programmes.
- *Regional centre network* – a district heating and cooling network supplied by gas and biomass CHP and geothermal wells.
- *Local centre network* – district heating networks where there's sufficient critical mass in and around local centres, anchored by public buildings.
- *Standalone generation* – wind cluster and single turbine sites where a viable wind resource exists.

3.11 Allied with these energy opportunities areas, the study recommends the production of a spatial energy plan for the City Region identifying strategic projects to be taken forward. Objectives and proposals for the energy plan should then be incorporated into GM Core Strategies, with perhaps an accompanying Supplementary Planning Document.

3.12 Whilst planning policies will play a role in delivering strategic projects, the scale of investment required to implement them will present the most significant challenge. The report recommends using developer contributions, the establishment of City Region funds and public sector commitment to underwrite investment to aid delivery and viable of project implementation.

Greater Manchester Low Carbon Economic Area

3.13 Following on, and linking in with the findings of the Mini-Stern Report and AMGA Decentralised Energy Study; Greater Manchester was designated the UK's first Low Carbon Economic Area (LCEA) for the Built Environment in December 2009. Building on the City-Region's strong track record in regeneration and its world leading university and research capabilities the five year programme will enable Greater Manchester to become a world leader on the low carbon agenda and enjoy a range of benefits linked to jobs and investment, sharing its expertise throughout the UK and beyond.

3.14 The LCEA will involve a five-year "retrofit" programme, which will be one of the largest initiatives of this type in the world; improving the insulation of thousands of homes and offices in Greater Manchester. Small-scale renewable energy technologies will also be installed and "smart meters" will be introduced so people can see how much energy they are using.

3.15 A 'low carbon laboratory' will also be established focusing on the research strengths of the universities where new innovative technologies will be developed and tested. One of the most innovative areas of work will be the development of new finance initiatives such as mortgage products linked to carbon savings.

The overarching vision and aims for the Manchester LCEA are as follows:

"By 2015 Greater Manchester has established itself as a world leader transforming to a low carbon economy."

We aim to:

- Have created the necessary investment and delivery vehicles required to undertake the physical retrofit of both the public and commercial sectors.
- Have established the Manchester Corridor Low Carbon Laboratory as a test ground for innovative technologies using existing organisational, academic and professional capacities and expertise.
- Ensure that the business opportunities which the LCEA creates are maximised by the Greater Manchester, Northwest and UK supply chains.
- Gain an increased market share and value for the Low Carbon Industrial sector in Greater Manchester and the North West.
- Have increased employment opportunities for residents so that more than 34,800 people are employed in the sector.
- Have reduced carbon emissions within the residential sector by retrofitting 75% of homes.
- Have created a delivery structure that sets Greater Manchester on a trajectory to meet Government targets for the supply of renewable energy.
- Have strengthened the spatial planning framework so that by 2016 all new developments will be zero carbon.

3.16 The LCEA programme does not have funding attached to it; instead the North West Evergreen loan fund was established to run along side it, providing £60 million of support funding. The fund requires projects to make a commercial return repaying loans over an agreed period, enabling funds to be recycled for other projects.

Greater Manchester Climate Change Strategy

3.17 Building on the City-Region's LCEA programme, the Greater Manchester Climate Change Strategy has been created to provide a strategic direction for GM through to 2020. It will co-ordinate the carbon reduction plans and adaptation strategies that have already been created by the ten Authorities and provide an effective, integrated approach for all organisations across Greater Manchester.

3.18 The Strategy will guide the actions of AGMA, our Local Enterprise Partnership, and the 10 local authorities; creating a Greater Manchester context for the actions of businesses and partner organisations from all sectors.

3.19 The Strategy encompasses a broad range of areas from innovation, renewables and energy efficiency to new business opportunities, the development of 'smart' infrastructures, the protection and enhancement of our green space and the actions of individuals and organisations across all GM communities and neighbourhoods.

3.20 The Strategy contains a number of headline indicators that will be taken forward across and beyond the life span of the document:

- *Buildings* – retrofitting programme to reduction carbon emissions from existing building stock and provide business opportunities and jobs through the initiative.

- *Energy* – development of local generation technologies, use reduction and district heating networks. Utilise opportunities arising from energy research undertaken by the GM universities.

- *Transport* – continued expansion of Metrolink, radical improvements to public transport, a shift towards electric vehicles with city-wide charging networks, integrated smart-ticketing and investment in low cost highest impact activity (cycling & walking).

- *Green infrastructure* – importance of green infrastructure is going to grow as climate change occurs. A green infrastructure protection programme will be put in place as will steps to improve health and wellbeing and ensure more carbon stays locked into our landscapes.

- *Sustainable consumption* – changing what we consume will drive the transition to a low carbon culture more quickly and create new local markets – low carbon alternatives to the high carbon products of today.

Tameside Decentralised Energy Study

3.21 Following on from the strategic recommendations and observations of the AGMA study, Tameside MBC commissioned consultants to undertake a Tameside specific Decentralised Energy Study to highlight the specific decentralised energy technologies viable across the Borough. Linked with these technologies, the study also assessed development viability against implementation of Part L Building Regulations and suggested content for Core Strategy policies.

3.22 Following a similar process undertaken for the Greater Manchester study, the consultants identified a number of decentralised methods of energy production that could utilise Tameside's topography, geology and natural and built assets to create viable energy production. The primary technologies and methods identified as potentially viable are as follows:

Wind energy

3.23 The study identified areas of Tameside as having areas of high wind speeds resulting in wind energy potential:

- Two sites in the east of the Borough have the potential to accommodate wind clusters.
- Six sites were identified as having the potential to accommodate single large turbines at the Peak Forest Canal, Godley Junction and Windmill Lane.
- Broad opportunity areas were identified for small to medium sized turbines of up to 15m.

Hydropower

3.24 The rivers Tame and Etherow offer Tameside the potential to utilise their weirs for Hydropower. Utilising Environment Agency data the study identified the 2 classes of potential, each with either low or moderate constraints:

- The River Tame contains 17 weirs in the 20-50kWe range and 3 in the 50-100kWe range.
- The River Etherow contains 4 weirs in the 20-50kWe range and 1 in the 50-100kWe range.

Light industrial roof solar power

3.25 Tameside's industrial based employers (past and present) have created a large number of industrial buildings with roof space that could accommodate large areas of solar photovoltaic cells. The study highlights that the Borough contains 1,219,441 m^2 of industrial roofspace that could have the combined potential of producing 107-162 MWe (without constraints considered).

Large heating networks

3.26 Ashton (2-5 MWe gas or biomass CHP) and Stalybridge (1 MWe gas CHP) town centres were identified as having the potential to accommodate large heating networks due to the number of public buildings, presence of social housing, the clustering of buildings and their proximity to potential future development sites.

Small heating networks and clusters

3.27 The study mapped all public buildings, schools & colleges, high density social housing and sheltered housing. These were overlaid with potential future development sites which identified the potential of linking at least 27 sites with existing public buildings. In turn this identifies future potential for creating small heating networks or clusters.

3.28 The study also identified canal water cooling, geothermal mine-water heating (requires much more detailed analysis of mine workings), biomass wood chip and coal bed methane as additional sources of potential energy production.

Viability v Part L

3.29 Having identified the technologies offering the greatest viable potential for the Borough, the study details the need to ensure policies within the Tameside Core Strategy enable / encourage the appropriate delivering of these technologies, linked with GM wide aims and objectives. The study provides guidance on future policy content associated with the specific technologies, issues surrounding infrastructure and the funding / collection of off-site contributions, together with over arching energy policies.

3.30 One of the primary challenges to achieving the CO_2 reductions required by new develop is viability. With the stepped tightening of Part L of the Building Regulations providing the national process to achieving zero carbon buildings, there's a need for the Council to provide guidance and assistance to aid development viability in order to retain and expand investment in the Borough.

3.31 In order to help establish what guidance and assistance may be needed the study tests technology options for different building types against the cost and viability of Part L compliance.

3.32 The study tested viability of the following uses:

- Housing – apartments, townhouse and semi-detached
- Employment – B1 office (2000m^2), B2 light industrial (2000m^2) and B8 storage (5000m^2)
- Retail – small supermarket (800m^2), large supermarket (8000m^2) and town centre comparison (2000m^2)

3.33 For each use a series of simplified development appraisals were carried out applying different technology scenarios in order to try and identify viable options for each building type.

3.34 For each building type assessed 2013 Part L compliance could be achieved (if the technology or solution is available) with decentralised energy technologies and either Advanced Practice Energy Efficiency (APEE) or Best Practice Energy Efficiency (BPEE) measures. As Part L tightens further from 2016, the technologies and measures applied to comply with 2013 requirements will need to be added to with additional solutions to meet 2016 regs. The study highlights that in order to retain development viability, compliance will need to be achieved through 'allowable solutions' (off-site) which could include payments to help fund off-site PV or wind installations or contributions to a community renewables fund.

Delivery

3.35 Part L of the Building Regulations will be the primary mechanism used by the Government to achieve its carbon reduction targets for new buildings. Whilst the onus will be on the developer to achieve the regulations, the Tameside Study has highlighted that in order to help retain and grow investment in the Borough the Council will need to provide assistance and mechanisms to help developers comply. Planning policy will play a part in this process, but 'allowable solutions' will also have to be established to enable appropriate buy-out options. There will also be a need for the Council to establish partnerships with energy technology providers to help deliver both on and off site solutions.

4.00 Summary

4.01 It's globally recognised that as a planet we need to reduce the carbon emissions we're omitting. Internationally a number of Governments have signed up to carbon reduction targets, with the UK Government committed to reducing carbon dioxide emission to 80% below 1990 levels by 2050.

4.02 In order to help achieve these commitments national targets have been filtered down through national policies and strategies, key elements of which have, and will continue to be fed into planning policy and building regulations.

4.03 The stepped tightening of Part L of the Building Regulations is the primary national driver for improving the energy efficiency / carbon emissions of new developments. Yet in order to retain development viability whilst meeting these regs, mechanisms will need to be in place to assist developers achieve their given requirement. Appropriate planning policies will need to be one of these mechanisms, providing guidance on the development of appropriate decentralised energy technologies on or off site.

4.04 In addition to decentralised energy specific policies, the core strategy will also need to acknowledge the objectives and aspirations of the LCEA and accompanying Greater Manchester Climate Change Strategy, whilst retaining compliance with the National Planning Policy Framework.

5.00 Key Issues

Linking Development with Localised Energy

5.01 The primary issue associated with decentralised energy is managing the transition from sole reliance on large scale, nationally derived energy sources to smaller scale, more localised sources supplementing or replacing national facilities.

5.02 In order to aid this transition a number of elements need to be established and managed by the Council:

Localised Energy Production

5.03 The Tameside Decentralised Energy Study has identified the primary energy technologies likely to be viable for Tameside. These are wind energy, hydropower, light industrial roof solar power, large heating networks and small heating networks.

5.04 In order to help realise these technologies and further assess viability, the following should be undertaken:

- Create appropriate policies within the Core Strategy to aid the development of these technologies.
- Identify appropriate sites with the Site Allocations Development Plan Document.
- Undertake further detailed studies to assess viability
- Seek potential development / funding partners
- Create partnerships with local businesses to utilise their land / buildings e.g. for industrial solar roof technologies
- Establish potential funding mechanisms (CIL?) to support development of technologies and aid Part L compliance

Part L viability

5.05 The primary goal of tightening Part L of the Building Regulations will be to improve the energy efficiency and carbon emissions of new developments. But this will also drive the development and requirement for decentralised energy. As highlighted by the Tameside Decentralised Energy Study, whilst some uses will be able to meet Regs through on site technologies, others will need to have the ability to meet the Regs through 'Allowable Solutions' (off site). It is therefore vital that the Council has appropriate partnerships and mechanisms in place to help developers achieve viability on or off site. Without this development may not be viable.

Wider Climate Change Issues

5.06 Allied with the development of energy efficient buildings and decentralised energy sources, there is a need to help address other climate change related issues:

Green infrastructure

- Need to protect the existing green infrastructure within the Borough.
- Enhance links with and accessibility to green infrastructure.
- Encourage urban greening to aid shading and carbon capture / retention.
- New development should successfully link with, enhance and/or develop green infrastructure.
- Combine green infrastructure with Sustainable Urban Drainage Systems (SUDS).

Transport

- Improve facilities and networks for cycling and walking to create safe interlinking networks and facilities for cycle storage.
- Greater integration between modes of public transport.

- Support the development of electric vehicles and the infrastructure requirements of these.
- Support increased use of public transport, walking and cycling

Flooding

- Ensure new development applies appropriate Sustainable Urban Drainage Systems (SUDS) to accommodate surface water drainage.
- Ensure mitigation measures are applied to known flooding 'hot spots' via production of a detailed Surface Water Management Plan (SWMP)
- If development occurs within the flood plain, it should be appropriately designed to withstand flooding incidents.

6.00 Cross Cutting Themes

6.01 Issues surrounding Climate Change & Decentralised Energy inter-connect with a number of other topic areas including:

Housing – the application of Part L Building Regulations and installation of decentralised methods of energy will impact on housing design, orientation and location.
Economy & Employment – the growth of the 'carbon economy' could aid job creation and help develop new employment sectors within the Borough. Development viability as a result of climate change measures could enhance or hinder the local economy.
Town Centres – town centres, particularly Ashton will play a vital role in enabling the viability of heating networks. They will also be vital in creating sustainable communities with access to high quality public transport.
Transport & Infrastructure – sustainable transport and the development of appropriate infrastructure to support the creation of decentralised energy will be vital to achieving carbon reduction measures.