3. The present position

In this section we review the current energy planning policy at national and regional level, relating it to the present position at the sub-regional level, and projected growth and development of the Manchester City Region.

3.1 National and regional drivers for change

In order to develop a planning policy framework for the sub-region it is important to place it in the context of national and regional energy and climate change policy. National energy policy has evolved rapidly in response to a growing realisation of the scale of change that will be required to tackle climate change.

Whilst this has undoubtedly created a much stronger policy basis for action, the downside is that there is, as yet, no clear overview of how they fit together to inform spatial planning at a local or sub-regional level. In this section we seek to identify clear policy themes that the City Region's policy framework will need to complement and create a spatial context for.

3.1.1 Establishing carbon budgets

With royal assent of the Climate Change Act of Parliament and establishment of the Committee on Climate Change to provide independent oversight the scene is set for the implementation of five year national carbon budgets [7]. Budgets have now been set that create a legal requirement to work towards a medium term target of 34% reduction against 1990 levels by 2020. The long term and now binding national target is for an 80% reduction by 2050.

It is likely that these targets will need to be, in part, devolved down to regional, sub-regional and district levels. The introduction of National Indicators 185 and 186 under Local Area Agreements began this process, following on from recommendations in the Local Government White Paper, and local authorities together with the service sector will shortly be brought into the Carbon Reduction Commitment mechanism, which seeks to achieve sectoral reductions.

3.1.2 Making the transition to a low carbon economy

Commissioned by the Prime Minister, the Stern review of the economic implications of climate change established the fiscal argument for a precautionary approach, providing evidence that it will be cheaper to invest now in order to mitigate climate change. Planning was identified as one of four priority areas for action, and the potential to realise the economic benefits from growing a 'low carbon economy' was set

[7] Committee on Climate Change, *Building a low carbon economy*, First report of the Committee on Climate Change, *The Stationery Office*, December 2008

out in the new manufacturing strategy entitled 'New challenges, new opportunities'[8] and the new national 'low carbon transition' plan [9].

The Government has given strong support to the concept of City Regions as a means to drive growth and competitiveness. Manchester City Region's Multi Area Agreement (MAA) formalised the arrangement between participating Local Authorities, creating the basis for joint working as a City Region through a series of new Commissions [10].

Developing a low carbon economy was set out as a key aim for the new Manchester City Region, building on the findings of the Mini-Stern [11]. The Mini-Stern projected a loss of £20bn in GVA by 2020 if the City Region fails to achieve carbon reductions, suggesting that;

> *'unless [the City Region] achieves significant emissions cuts, improves its resilience to Climate Change, and leverages its assets, the Manchester City Region could fall substantially short of its economic regeneration goals and targets.*
>
> *Early action is therefore needed to respond to legislative drivers by cutting emissions, improving resilience, and adapting economic priorities to take account of Climate Change legislation.*
>
> *In doing so the Manchester City Region has the potential to enhance its competitive advantage over those Cities that are slower to adapt.'*

The Mini-Stern highlighted the central role of spatial planning in seeking to adapt and realise this competitive advantage, stating that:

> *'Manchester City Region [has] the opportunity to shape and align planning policy to direct development to deliver carbon efficiencies....*
>
> *[and] an opportunity for a collective approach to energy planning that can take advantage of the economies of scale in major development and regeneration projects within and across local authority boundaries.*
>
> *New approaches to energy generation and distribution are required and a more comprehensive approach to energy planning creates a significant economic opportunity for the Manchester City Region. '*

[8] Department for Business Enterprise & Regulatory Reform (BERR) *Manufacturing: New challenges, new opportunities*, September 2008
[9] HM Government, *The UK low carbon transition plan: National strategy for climate and energy*, The Stationery Office, July 2009
[10] AGMA, *Statutory City Region bid*, March 2009
[11] Deloitte, *'Mini-Stern' for Manchester*, Final report, August 2008

3.1.3 Spatial planning as a driver for change

The PPS1 supplement on Planning and Climate Change has driven the brief for this study [12]. Whilst covering a broad range of spatial planning issues relating to climate change mitigation and adaptation, its central focus is on creating a policy framework to support delivery of the 'Building homes for a greener future' policy commitment to zero carbon homes, and in the future a proposed new series of carbon reduction milestones for non-residential buildings[13].

The PPS1 supplement places a strong emphasis on the adaption of policies and targets to local opportunities, including the development of decentralised networks linking new and existing buildings, and describes a more pro-active 'criteria-based' planning to identifying opportunities for energy generation (as also covered in PPS22 [14]).

A planned approach to the delivery of zero carbon homes has been further highlighted by responses to the Government's consultation on the definition of 'zero carbon', with the Green Building Council's own independent study suggesting that the majority of new homes would not be able to meet the existing definition of 'zero carbon', instead proposing a 'community energy fund' for off-site contributions [15].

This approach is mirrored in the North West RSS by policies EM17 'Renewable energy' and EM18 'Decentralised energy supply' which promote a spatial approach and seek, as a minimum, a 10% contribution to energy demand from on-site generation [16]. The RSS goes further by proposing sub-regional studies to understand local renewable energy resources and networks. We go on to discuss the specific implications in greater detail in section 6.

With consultation on a new Draft PPS4 'Planning for prosperous economies' the role of spatial planning in shaping future patterns of economic development, and its associated requirements for infrastructure, will be strengthened further.

3.1.4 Decarbonising our heat and power supplies

The European Union Renewable Energy Directive has driven new national targets for renewable electricity and heat [17]. The 2008 consultation on a new UK renewable energy strategy set out a proposed framework for sourcing 15% of our energy from renewables by 2020, together with separate targets of

[12] Department for Communities and Local Government, *Planning Policy Statement: Planning and Climate Change: Supplement to Planning Policy Statement 1*, December 2007
[13] Department for Communities and Local Government, *Building a greener future – towards zero carbon development*, September 2006
[14] Department for Communities and Local Government (2004) *Planning Policy Statement 22: Renewable energy*, www.communities.gov.uk
[15] UK Green Building Council, *The definition of zero carbon*, Zero carbon task force report, May 2008
[16] Government Office North West, *North West of England Plan: Regional Spatial Strategy to 2021*, The Stationery Office, September 2008
[17] Official Journal of the European Union, *Directive 2009/28/EC on the promotion and use of energy from renewable sources*, June 2009

35% for electricity and 14% for heat [18]. Pro-active planning was identified as a key mechanism to achieve these targets, and we describe planning-related proposals in more detail in section 4.

A draft Heat and Energy Saving Strategy has recently been published which seeks to respond to the new emphasis on heat as well as electricity, and includes specific focus on the role of local authorities in planning for Combined Heat and Power (CHP) and district heating [19]. It includes recommendations for the use of public buildings as 'anchor' loads for heating networks, and for the introduction of a new regulatory framework to direct investment in networks.

This overall change in emphasis will require a revision of the renewable energy targets and scenarios set out in the North West Regional Spatial Strategy (RSS), including those for Greater Manchester. Arup's 2008 study for 4NW to inform a partial review of the RSS explored the implications of the revised targets, highlighting the scale and difficulty of the challenge, and recommending the use of broad typologies for the application of different technologies [20].

[18] Department for Business Enterprise & Regulatory Reform (BERR), *UK Renewable Energy Strategy*, Consultation June 2008
[19] HM Government, *Heat and energy saving strategy*, Consultation February 2009
[20] 4NW, *Towards broad areas for renewable energy development*, Report by Ove Arup & Partners, July 2008

Table 3.1

'Theoretical maximum' regional renewable electricity and heat generation by 2020

Technology	Electricity only		Combined Heat and Power (CHP)				Heat only	
	Installed capacity (MW)	Electricity output (GWh)	Installed capacity (MW)	Electricity output (GWh)	Installed heat capacity (MW)	Heat output (GWh)	Installed heat capacity (MW)	Heat output (GWh)
Biomass sources								
Existing	19	137						
Co-firing	100	788						
Municipal waste			60	430	119	860	136	983
Waste wood			72	517	95	689	186	1,343
Energy crops			197	1,420	262	1,894	511	3,693
Arboricultural			9	63	12	84	23	163
Woodland			22	161	30	215	58	419
Landfill gas			215	1,301	430	2602	511	3,094
Sewage gas	27	95	16	114	18	131	36	262
Onshore wind								
Existing	166	392						
New schemes	622	1,471						
Repowering	50	119						
Offshore wind	1,730	5,304						
Hydro	14	55						
Tidal	100	175						
Total	*2,828*	*8,539*	*589*	*4,007*	*966*	*6,474*	*1,461*	*9,957*

Source: 4NW (2008) *Towards broad areas for renewable development*

3.1.5 Regulating carbon emissions from new development

The 2006 Green Paper 'Building a greener future: towards zero carbon development' set out a policy commitment to make all new homes zero carbon from 2016 [21]. Following consultation in late 2008 it is now also proposed that this is extended to schools and colleges by 2016, all public buildings by 2018 and all non-domestic buildings by 2019 with interim milestones for improvement [22]. Both domestic and non-domestic targets are to be implemented through revisions to the Building Regulations.

The government recently held a consultation on a revised definition of 'zero carbon' in response to concerns raised by industry [23]. This has raised the possibility that it may be possible to meet the target through the use a combination of on-site energy technologies and near site 'allowable solutions' which a building, or development, would source its energy from – either directly or indirectly over local energy networks.

The 2016 and 2019 dates are of particular significance because they will bring a greater proportion of building related energy use under direct regulation. At present most energy use in occupation (including IT, appliances and small power) is not currently covered by the Building Regulations, effectively meaning that they are currently unregulated.

3.1.6 Providing greater energy security and diversity

With the depletion of indigenous fossil fuel resources and a projected national increase in reliance on fuel imports the 2007 Energy White Paper emphasised the need to secure a future diversity of energy and fuel sources [24]. In 2007/08 the North West region generated 123% of its electricity, was 54% self-sufficient in natural gas and in terms of electricity generation imported all of the fuel required apart from natural gas used in turbines and some biomass co-firing at Fiddlers Ferry [25].

The fact that the sub region is embedded within national and regional gas means that, in the short term at least, the City Region is insulated from the need to invest in decentralised energy generation. The Energy White Paper described how energy security and tackling climate change should influence future decision making, with a focus on:

- Bringing forward further major on and offshore wind farm sites, which would include further offshore sites in the North West:
- Licensing of new nuclear power stations on land adjacent to existing sites, which would include Sellafield in Cumbria;

[21] See footnote 13
[22] Department for Communities and Local Government, *Definition of zero carbon on homes and non-domestic buildings*, Consultation document, December 2008
[23] *See footnote 21*
[24] Department for Business Enterprise & Regulatory Reform (BERR), *Meeting the energy challenge*, White Paper on energy, The Stationery Office, May 2007
[25] *See footnote 19*

- Requirements for new gas fired stations to be designed and located to operate as Combined Heat and Power (CHP) plant, which would include the Carrington Power station proposal in Trafford;
- Requirements for new coal fired stations to install some form of carbon capture and storage.

The UK renewable energy strategy, which is due to be published in late 2009, will seek to describe how wind energy, together with a range of other renewable energy technologies could further contribute to energy security.

3.1.7 Making the link between energy and waste planning

In order to comply with European Directives that aim to reduce municipal waste arisings local authorities must reduce the amount of organic waste being landfilled and seek to maximise CO_2 emissions reductions from energy recovery [26]. A series of other waste streams are also progressively being brought under regulation.

These requirements are now reflected in the strategy driving the Greater Manchester waste Private Finance Initiative (PFI), which was signed in April 2009, and the associated joint waste Development Plan Document (DPD) which is currently under consultation across Greater Manchester, and which will create a spatial planning framework for the PFI investments [27].

Projects and investment proposed through DPD create the potential to make the link between waste planning and the provision of low carbon energy infrastructure. Private sector investment under the waste PFI will be delivered by Viridor. Strategic investment will be made in Mechanical Biological Treatment (MBT) plants which will produce a Refuse Derived Fuel (RDF) and also include Anaerobic Digestion plant on the same site to process organic waste.

Waste streams arising from industry also create the potential to create renewable fuels. These include various grades of wood waste, which can be processed into chips or pellets, and organic wastes and oils, which can be processed into liquid fuels such as biodiesel.
Care must, however, be taken to ensure that energy recovery is the best option for each waste stream and that fuels are of a suitable grade for clean energy production.

3.1.8 Market development to achieve economies of scale

The Government has sought to put in place a series of funding mechanisms designed to bring down the cost of low carbon technologies by stimulating the market. To date these have included market mechanisms such as the Renewables Obligation (for electricity) and the Climate Change Levy, and targeted subsidies such as the Low Carbon Buildings and Bioenergy infrastructure programmes. The extension of Permitted Development rights to specific micro-generation technologies was also intended to stimulate the market.

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[26] Official Journal of the European Union, *Directive 1999/31/EC on the landfill of waste,* April 1999
[27] AGMA, *Greater Manchester joint waste DPD: Stage 2 issues and options report – built facilities*, October 2008

Consultation on the new UK Renewable Energy Strategy and the Heat and Energy Saving Strategy has indicated a new focus on supporting the market for low carbon heat and higher levels of subsidy for more expensive technologies such as solar photovoltaics. Specific mechanisms are likely to include:

- A renewable electricity 'feed-in' tariff';
- A Heat Incentive which will support biomass heating;
- And a new development framework to promote CHP and district heating.

Much of the enabling legislation for these mechanisms was put in place during 2008/09, with implementation programmes due to be put in place following consultation on their scope and level of support.

3.2 Sub-regional drivers for change

With the sustained levels of growth and development realised over the last two decades, the ten districts of Greater Manchester have sought to capitalise on their position as a counterpoint to the South East by seeking City Region status.

3.2.1 Structural changes in the economy and housing market

In the last two decades there have been a number of structural changes in the economy and housing market of the City Region. These are likely to have had, and will continue to have, a distinct influence on the energy demand profile of the City Region, however there is currently a limited availability of data to substantiate this position or to apply sensitivities.

The accelerated hollowing out of traditional industries has been increasingly replaced by the new 'knowledge economy' taking the form of large floor plate offices, and associated hotel, retail and leisure uses. The energy use associated with these use classes is typified by a large proportion of (currently) unregulated electricity use. Development of these uses has been centred around major centres and strategic employment sites, and the North West RSS promotes a continued focus on this pattern of development under policies RDF1 and DP9.

The housing market has seen profound changes. A shift in planning policy during the late 1990's led to growth in brownfield development in urban areas, and this was followed by significant growth in residential development based on apartments in and around Manchester's City Centre.

This reflects a structural change in housing demand away from houses towards apartments, a form of development typically now also found in and around sub-regional centres and regeneration areas. New-build house completions fell to 55% in 2008/09 compared to an

average of 80-85% in the 1990's [28]. The energy used by apartments is typified by the use of all-electric systems for space heating and hot water.

3.2.2 Implications for the City Region's carbon budget

Until recently accurate estimates of sub-regional energy use and CO_2 emissions have not been readily available. A new time series of sub-regional CO_2 data from DECC for the period 2005 to 2007 produced to support National Indicator 86 shows that across the City Region emissions appear to have been growing marginally, in the region of 1-2% per annum, with Manchester showing the most significant increase of 4% [29].

Regional projections to 2020 by AEA Technology for 4NW are based upon the North West greenhouse gas emissions inventory [30]. 'Baseline' projections for 1990 to 2020 and 2005 to 2020 have been made. These suggest an increase in emissions for Greater Manchester of 2.9% between 2005 and 2020, taking into account economic development and population trends. However, overall emissions are projected to fall by 5.8% against 1990 levels by 2020 – still significantly short of the national target of at least 34%.

Manchester has been the engine of the City Region's growth, and it is likely that the Accelerated Growth Scenario (which we go on to describe in Section 3.3.2) could, without foresight, contribute to marginal growth in CO_2 emissions in a number of other key districts – notably Tameside, Trafford, Salford and Wigan - until 2016-19 when zero carbon targets should start to halt emissions growth from new development.

Regional projections by AEA Technology and more recently by URS Corporation do, however, highlight the greatest potential for emissions savings as being from the existing building stock – suggesting that low and zero carbon infrastructure strategies should bring together opportunities to serve both new and existing buildings.

[28] Department for Communities and Local Government, *Permanent dwellings completed by houses and flats: North West dataset*, Local Authority and NHBC returns
[29] Department for Business Enterprise & Regulatory Reform (BERR), *Local authority carbon dioxide emissions*, Data for local authority and Government Office region areas
[30] 4NW, *Assessment of potential carbon savings achieveable in the North West region by 2020*, March 2009

Table 3.2

Sub-regional CO_2 emissions 2005/07 with projections to 2020

Year	CO_2 emissions (kilo tonnes)		
	Domestic buildings	**Non-domestic buildings**	**All sectors**
1990	-	-	19,100
2005	6,129	9,870	19,175
2006	6,179	10,028	19,298
2007	5,979	10,044	19,130
2020	-	-	18,000

Sources:

1. 4NW, *Assessment of potential carbon savings achievable in the North West region by 2020*, March 2009
2. AEA, *Local and regional CO_2 emissions estimates 2005-2007*, Dataset produced for DECC

3.2.3 Accelerated Growth Scenario

The last two decades of growth and change across the City Region set the scene for future projections made by AGMA in support of economic aspirations. The basis for economic, demographic and housing forecasts is the Greater Manchester Forecast Model (GMFM). The model makes the link between housing and the economy, and is used to inform infrastructure planning.

Using the GMFM model an 'Accelerated Growth Scenario' for the City Region has been developed. This scenario forms the basis for the Greater Manchester Multi-Area Agreement (MAA), and is therefore important to understand as the basis for the Growth Point Programme of Development (PoD)[31]. The PoD is intended to underpin economic growth by:

- Removing constraints and developing solutions for the delivery of new housing in strategically important sites in urban areas;
- Supporting the provision of transport, sustainable energy, utilities infrastructure and green infrastructure, which supports new housing development;
- Supporting new developments which provide the right mix, type, size and tenure of housing within sustainable neighbourhoods, including the delivery of affordable housing;
- Balancing renewal and growth to ensure appropriate housing choices for all sections of the community;
- Actively aligning investment to deliver new housing development and sustainable neighbourhoods and seeking an extension of this approach within Government Departments and key partner agencies.

The location and form of the development sites earmarked by the PoD have been reviewed by this study, and are discussed further in section 7.

[31] AGMA, *New Growth Point Programme of Development*, Submission to DCLG October 2008

3.2.4 Growth and development projections

The regional priorities for future patterns of growth and focus areas for development are described at a high level by North West RSS Policy RDF 1 'Spatial priorities'. These are further supported by policies MCR 1-3 and 5 that describe the spatial priorities for Manchester City Region. In this section we summarise the projections that underlie these policies.

Housing projections

The North West RSS provides projections for the distribution of housing provision across the city-region (see table 3.3 below). These figures must be seen in the light of the recent economic downturn which forecasts suggest will not see a return to pre-2008 levels of new-build until 2011/12.

In addition to the North West RSS projections, the City Regions application under the Growth Point Programme of Development (PoD) seeks an uplift in housing numbers of 11,268 between 2008 and 2017, representing a 20% uplift per annum [32]. The programme encompasses brownfield sites earmarked for increased housing numbers over and above RSS projections in broad areas across four districts of Greater Manchester.

Table 3.3

Sub-regional distribution of housing provision 2003-2021

Distribution	Housing units	Annual average provision (net of clearance and replacement)	Indicative target proportion on brownfield land
Manchester and Salford			
Manchester	63,000	3,500	At least 90%
Salford	28,800	1,600	
Pennine Manchester			
Oldham	5,200	289	
Rochdale	7,200	400	At least 80%
Tameside	13,500	750	
Southern Manchester			
Stockport	8,100	450	At least 80%
Trafford	10,400	578	
Northern Manchester			
Bolton	10,400	578	At least 80%
Bury	9,000	500	
Wigan	17,600	978	
Total	173,200	9,623	

[32] *See footnore 30*

Urban Vision is currently refining these projections for AGMA in order to develop a sub-regional planning policy framework. Ward level data and information on strategic housing sites has been collated from each of the ten districts providing, where possible, a split between houses and apartments. To inform this study this data has then been used to create spatial plans that can be related to existing energy distribution networks and character areas of change.

Assuming the loss of a years supply to reflect the downturn and 3% social housing provision (based on returns from Local Authorities and NHBC) these projections suggest that between 2010 and 2016 the sub-region will need to deliver:

- 18,669 homes at Code level 3 (25% CO_2 reduction)
- 29,446 homes at Code level 4 (44% CO_2 reduction)
- 577 at Code level 5 (zero carbon for regulated energy use)

In addition the sub-region will be expected to deliver 58,604 units to Code level 6 (zero carbon for all energy use) between 2013 and 2021. These figures do not take into account higher targets that may be set for private housing associated with publicly funded land assembly by organisations such as the Homes and Communities Agency.

The future contribution of new-build to the overall housing stock should also be put into context. Based on the RSS projected build rate of 9,623 per annum it would by 2021 account for 8.4% of the City Region's housing stock. Whilst around half of these completions would be expected to have met Code level 6, there is a clear need to mitigate any net rise in CO_2 emissions that could result from growth and development projections, and to ensure that all regulatory targets are met. Our initial modelling suggests that without zero carbon infrastructure being in place this could account for 1.6% of the sub-regions CO_2 emissions.

Employment land projections

The North West RSS provides projections for how many hectares of employment land that Greater Manchester should allocate over the plan period to 2021 and how this should be spatially focused, with regard to both existing and new sites. The table below presents projections for the take-up of current allocations, and identified additional allocations that may be required – subject to prevailing economic conditions.

The spatial pattern is likely to reflect the spatial policies for the city-region, with a focus on the City-Regional centre followed by the sub-regional towns and centres. This could influence the energy intensity of development, with larger office complexes tending to have greater electricity demand for services such as centralised air conditioning and IT equipment.

Table 3.4

Sub-regional employment land projections

Employment Land (hectares)	Greater Manchester	North West
2005 Supply	1368	5475
Current take up per annum	112	313
Projected increase in take up	+6%	+9.22%
Projected take up per annum	119	342
Need 2005/21	1,904	5,472
Extra allocation required	536	-3
Flexibility factor	+20%	-
Need 2005/21 (incorporating flexibility factor)	2,285	6,654
Extra allocation required (incorporating flexibility factor)	917	1,179

Urban Vision is currently refining these projections for AGMA in order to develop a sub-regional planning policy framework. Ward level data and information on strategic employment sites has been collated from each of the ten districts. To inform this study the data has been converted into floor areas using density and plot ratio assumptions for different urban locations. This has then been used to create spatial plans that can be related to existing energy distribution networks and character areas of change.

Public sector investment

The last decade has seen significant and sustained investment in new and existing public buildings. Public sector buildings have an important role to play in anchoring decentralised energy networks and acting as pilots for micro-generation technologies. Extension of the Carbon Reduction Commitment to the public estate and new National Indicator 185 have both focussed attention on the need for carbon management.

Government spending plans, together with projects at a sub-regional and local level, provide an indication of the focus for future investment, although there is a degree of uncertainty due to projected public spending cuts. Programmed investment includes:

- Civic buildings: Each district has a significant number of civic buildings that provide office space for core administration. A number of major buildings and complexes are planned for major improvement works or replacement with purpose built new buildings. These include Manchester's Town Hall complex, where a new heating system is being explored; Bury's Council offices, where key departments will be moved to new

buildings; and Rochdale's Civic Centre, which is to be rebuilt as part of a wider town centre masterplan.

- Housing: The transfer of the majority of the sub-regions council housing stock to Arms Length Management Organisations (ALMO's) and the requirements of Decent Homes have led to significant investment to improve the stock. This investment is ongoing and with the low minimum SAP target under Decent Homes likely to increased there will be an increasing focus on the need for more substantial energy efficiency and fuel poverty measures;
- Education: Spending on education is devolved through each Local Authority and a series of colleges and higher education providers, with the focus on two main streams of investment:

    - Schools: Whilst the secondary school Building Schools for the Future programme has already led to the rebuilding of many college sites, further investment is being provided through future 'waves' of the BSF, the Targeted Capital Fund and PFI. The Primary Capital programme for primary schools was announced in 2008 and aims to address all schools by 2022/23.
    - Further education: A number of further and adult education colleges are completing, planning or have proposed investment, including Manchester College, Bolton Community College and Oldham College. In some cases, such as in North Manchester, investment has been combined with Local Authority investment in new library facilities.
    - Higher education: A utilities strategy encompassing low carbon energy is being taken forward for the university and hospital corridor in Manchester. Alongside this strategy Manchester Metropolitan University is proposing to build an entire new campus in central Manchester. The University of Salford is investing in new facilities in order to co-locate with the BBC's Media City development.

- Health: The emphasis of Primary Health Trust investment programmes are two-fold, each of which is associated with a distinct scale and focus for investment:

    - Hospitals: A number of new hospitals have been completed, including Central Manchester and Wythenshawe, but further investment in both buildings and infrastructure is planned for a number of major locations including Salford Royal and Stepping Hill in Stockport.
    - Health centres: The LIFT programme will continue to bring forward new local primary healthcare centres across the sub-region, co-ordinated by local Primary Care Trusts and consortiums such as MaST (Manchester, Salford and Trafford) LIFTCo.

- Leisure: The transfer of management to arms length leisure organisations in a number of districts, including Oldham and Stockport, has led to new investment in leisure facilities, including sports centres and swimming pools. In a number of districts such as Bury, Rochdale and Bolton increasing running costs and the need to modernise and bring together services have focussed attention on the potential for more efficient new facilities.

3.3 What are the strategic implications for the City Region?

In this section we have sought to articulate a clear framework for decentralised and low carbon energy from the many emerging areas of Government policy and projections for City Region growth and investment . From the eight key policy areas reviewed we have been able to discern clear targets that serve to frame policy and highlight the scale and pace of change required:

- 2020 and 2050 'overarching' CO_2 targets: The national targets of 34% and 80% are now enshrined in law by the Climate Change Act and are to be cascaded down to local level in the form of five year carbon budgets. These targets require the engagement of all stakeholders;
- 2016 and 2019 'threshold' CO_2 targets: The 2016 zero carbon target for new homes and the proposed 2019 zero carbon targets for non-residential buildings create a clear threshold for which preparation will be required by stakeholders in the development industry, including utilities;
- 2015 and 2020 'build-up' energy targets: The revised UK Renewable Energy Strategy targets establish clear milestones which will require the build-up of momentum and capacity on the ground year on year. These targets require the engagement of the energy industry, but Local Authorities and the development industry will also have a role to play in delivering targets – particularly for building related technologies;

Investment in new buildings and energy infrastructure create the most readily available and cost effective opportunities to increase the City Region's low and zero carbon energy generation capacity, and to grow the market in order to achieve better economies of scale.

Whilst the PPS1 supplement on Planning and Climate Change, the Planning Act 2008 and the North West RSS, create a much stronger basis for low carbon energy planning, a stronger and more co-ordinated response at the sub-regional and district level will be required if there is to be a realistic chance of this challenging framework of strategic targets being met.

There are also a number of clear areas of potential synergy between planning policy and strategic investment. This includes energy and waste planning policies, associated investment in new infrastructure and the full range of programmed investment in public building assets.

The City Region, and now the UK as a whole with publication of the Low Carbon Transition Plan, has sought to position itself to create a low carbon economy. The Mini-Stern highlighted the importance of smart planning and low carbon infrastructure in seeking to translate this into action on the ground. In this respect the Accelerated Growth Scenario proposed for the City Region creates both a challenge and an opportunity.

Sub regional planning will need to be responsive to the pressures on CO_2 emissions that may be created by growth and development. But it will also need to play its role in preparing for and managing the costs to the wider economy of meeting the strategic targets. This will be particularly important in seeking to create a level playing field for investment across the City Region and to fashion a coherent competitive advantage that it can capitalise on.