

PEPESEC PROJECT

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Energy Planning in Greater Manchester (UK)

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PEPESEC WP4 – Energy Planning

PEPESEC - Partnership Energy Planning as a tool for realising European Sustainable Energy Communities

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PEPESEC defines energy planning as the process practiced in Sweden, where the supply, distribution and use of energy within a defined area is understood and targets and interventions for CO₂ reduction identified and implemented. In other countries it may be included as part of a Climate Change Strategy or Programme.

Sustainable Energy Action Plan for Greater Manchester, England, UK

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Summary

Over the last two years the UK has seen a wealth of new legislation and policy drivers to support the transition to a low-carbon society.

In Greater Manchester this has been supported with the development of new city-regional structures to better co-ordinate and deliver climate change programmes. A new Environment Commission came into being in 2009 which endorsed energy planning as a key work stream. A new Energy Group comprising high-level stakeholders from the utility companies, wider energy sector and municipalities, is in the process of being formed (Nov 09). It is hoped this new group will drive forward detailed energy plan development and programme implementation.

Focus on developing these new structures and processes for a city-region has formed an essential first step in the development of a framework city-regional energy plan.

Energy Planning at Greater Manchester level has involved an extensive programme and analysis of Greater Manchester's energy situation. For the first time in Greater Manchester's energy statistics have been utilised to produce accurate CO₂ emissions profile by sector. Supporting information from a wealth of stakeholders has provided a sound evidence base of current and planned interventions.

A series of energy scenario development sessions have taken place with stakeholders utilising the GRIP tool recommended under the Covenant of Mayors as a valuable social learning tool to facilitate understanding of the scale of the challenge and possible pathways to carbon descent.

Stakeholder workshops (planned for early 2010), will help identify and quantify the additional actions needed to reach aspirational targets set in the Greater Manchester Strategy of 2009.

Citizen level consultation in partnership with Tyndall Centre Manchester (Spring 2010) will provide additional intelligence on public acceptability of emerging priorities.

Collectively the energy planning work at Greater Manchester is helping develop and improve a framework to support detailed planning required at local level, and help shape the partnership needed to deliver the actions to deliver a low-carbon economy.

Step 1. Context of Energy Planning

National context

The UK's energy history is one of radical change over the last 300 years.

In 18th Century the industrial revolution saw the replacement of wood and charcoal with coal as a main fuel source. This expansion continued into the 19th century, with coal fuelling the domestic, industry and transport sectors. Gas from coal also fuelled a range of heating and lighting appliances.

Following overseas discovery of reserves in the late 19th / early 20th century, oil was widely exploited replacing coal for shipping and rail. By the 1950's new nuclear plants were providing a proportion of the UK's electricity. The discovery of north sea oil and gas in the 1960's led to rapid exploitation and depletion of nation resources. Domestic coal production had slumped by the early 1990's, replaced with the 'dash for gas' for electricity generation or coal imports.

With a focus on fuel security and reduction of carbon emission the UK is in 2009 committed to a radical transition to a low carbon economy over the next 40 years.

The **Department for Energy and Climate Change** is in charge of national energy programs.

Five year national carbon budgets have been set with royal assent of the **Climate Change Act** of Parliament (2008) and the establishment of the **Committee on Climate Change** to provide independent oversight. The primary delivery document driving delivery is the **Low Carbon Transition Plan** (2009).

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 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, with financial incentives for improvement and penalties for emission production.

The national **Planning Policy Statement 1 (PPS1) on Planning and Climate Change** (2007) covers 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 2006 **Green Paper 'Building homes for a greener future'** and the **Code for Sustainable Homes** policy commitment to zero carbon homes, setting a target for new build homes to be zero carbon by 2016, and in the future a proposed new series of carbon reduction milestones for new non-residential buildings to make them zero carbon by 2019. 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 proactive 'criteria-based' approach to identifying opportunities for energy generation (as also covered in **Planning Policy Statement 22 (PPS22) on Renewable Energy** (2004)). It is 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.

With the depletion of indigenous fossil fuel resources and a projected national increase in reliance on fuel imports the **2007 Government White Paper on Energy** emphasised the need to secure a future diversity of energy and fuel sources. It 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, to include further offshore sites in the North West;

- Licensing of new nuclear power stations on land adjacent to existing sites, to include Sellafield in Cumbria;
- Requirements for new gas fired stations to be designed and located to operate as Combined Heat and Power (CHP) plant, which includes the Carrington Power station proposal in Trafford;
- Requirements for new coal fired stations to install some form of carbon capture and storage.

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 solar electricity ‘feed-in’ tariff’;
- A Heat Obligation which will support biomass heating;
- and a new development framework to promote CHP and district heating.

The enabling legislation for these mechanisms is likely to be put in place during 2010, following proposals and consultation on their scope and level of support.

The Department for Transport (DfT) Carbon Reduction Strategy: ‘**Low Carbon Transport: A Greener Future**’ sets out how the UK transport sector will meet its Carbon Budget to 2020 as part of the wider UK Government commitment to reducing carbon emissions by 80% to 2050 compared to 1990.

National Indicator 188 has been developed by the Government to measure progress in preparedness in assessing and addressing the risks & opportunities of a changing climate.

Local context

There are several strategies which address energy work in the region, including the ‘**Northwest Regional Spatial Strategy**’ (2008), written by the North West Regional Assembly, North West Regional Development Agency, Government Office for the North West, and the Environment Agency (2006) and the ‘**North West Sustainable Energy Strategy**’ (NWRA, 2006). The North West also has its own **Climate Change Action Plan** (2007-9), and conducted an ‘Assessment of Potential Carbon Savings Achievable in the North West Region by 2020’ (4NW, 2009). In addition there are **Regional Housing, Waste and Transport Strategies**, a **Greater Manchester Local Transport Plan** and **Greater Manchester Waste Strategy**.

Manchester was part of the **Low Carbon Cities Programme**, run by the national Energy Saving Trust and the Carbon Trust in 2008 to provide carbon saving guidance to selected cities. This involved engagement with other major public sector bodies (NHS, universities) and other major influencers of city carbon emissions such as housing associations, large businesses and appropriate consumer, community, faith and voluntary groups, regional governing bodies and energy suppliers.

The Association of Greater Manchester Authorities (AGMA), which unites 10 neighbouring districts/authorities including Manchester, is in the process of establishing a series of commissions which oversee energy work in the region – those already established of particular relevance are the **Commission for the New Economy**, the **Environment Commission** and **Planning and Housing Commission**. AGMA has recently commissioned a **Decentralised Energy Study** for the region, which provides strategic recommendations for work on energy generation in the city region. Following the production of this study, a multi-sectoral **Energy Group** has been convened by the Environment Commission to continue this focus. The formation of a **Greater Manchester Climate Change Agency** has also been agreed, and this will be overseen by the Head of Low Carbon Economy within the Commission for the New Economy.

A rapid transition to a low carbon economy is positioned within the **Greater Manchester Strategy** (July 2009) as both a key priority and a precondition of economic success. The GMS identifies five objectives in delivering a rapid transition to a low carbon economy:

1. Establish Manchester city region as an internationally recognised research and consultancy centre in low carbon technologies and services and position firms as pioneers of low carbon business diversification.
2. Apply cross cutting sustainability principles to procurement, transport, spatial planning and investment activities, and prioritise the retrofit of existing domestic and commercial stock to underpin the transition to a low carbon economy, which is resilient to a changing climate.
3. Develop a robust understanding of critical infrastructure, strengthen accountabilities and improve the security of supplies and by investing in measures to make it fit for purpose for a low carbon, resilient and growing economy.
4. Enhance the role of transport infrastructure in enabling sustainable lifestyles, and develop an integrated approach to transport network and demand management across all modes that optimises use of the network, provides users with a full range of affordable low carbon transport options, and reduces their need to travel.
5. Develop pioneering approaches to solving key low carbon economy challenges via establishing low carbon economic areas.

The AGMA Environment Commission coordinates the delivery of this work between the 10 local authorities and is currently running a series of pilot projects.

In April 2009 the Chancellor of the Exchequer announced that the Manchester and Leeds City Regions had been selected as the two pilot statutory city regions.

The aim of the pilot is to see how Central Government giving groups of local authorities additional freedoms and flexibilities can help them better drive economic growth and contribute to sustainable development. It will help us to tailor programmes at a local level to meet our own economic, social and environmental needs and to have a direct and more dynamic hand in the future of our city region. The establishment of an Energy Board for Greater Manchester has formed an integral element of the forthcoming agreement.

Complementary to this, AGMA authorities have:

- In 2008, adopted a new constitution to reflect the ambition of the 10 authorities and provide a legal framework to manage strategic development and financial resources delegated from either a national or regional level;
- Over 2008-09, established 7 new thematic Commissions to co-ordinate strategic city-regional programmes, with the Environment Commission leading a trans-commission approach to energy;
- In 2009 published the Greater Manchester Strategy which sets out the vision and priorities to deliver economic prosperity, and achieve rapid transformation to a low carbon economy
- Put in place joint-administrative arrangements to co-ordinate a city-regional approach to tackling climate change under a climate change agency;
- In 2008 working with the Energy Saving Trust, established a single EST Advice Centre for Greater Manchester;
- Undertaken a city-region wide Distributed and Renewable Energy Generation Study to support the implementation of Planning Policy Statement 1 on Climate Change'

Most recently, AGMA has bid to Government to become a designated Low Carbon Economic Area (LCEA) for the Built Environment. This reflects Greater Manchester's ambition to achieve rapid transformation to a low carbon economy.

The Energy Group will be instrumental in turning this vision into reality.

Description of the municipality's intentions of joining the PEPESEC-project.

- 1) Research and develop new approaches to energy planning
 - To integrate energy planning and socio-economic planning to shape the development of a vibrant low-carbon economy
 - Identify transferable / adaptable methodologies for multi-stakeholder strategy development
 - Identify critical success factors in the development and implementation of effective energy plans
 - Identify the knowledge and skills sets required across stakeholder groups required for effective energy planning
- 2) Increase key stakeholder understanding and capacity, required of to develop an effective Energy Plans
 - Improve understanding of the economic and social benefits from energy planning
- 3) Development of a Framework City Energy Plan
 - Develop a comprehensive energy plan
 - Apply new methodologies adapted for local conditions
 - Utilise Intelligent Systems to engage with key stakeholders and wider communities
- 4) Evaluate and disseminate Energy Planning best practice guidance
 - Evaluate the adapted methodologies for energy planning development
 - Develop trans-nationally applicable best practice guidance for energy planning
 - Cascade learning from the project with participating countries and wider EU
- 5) Sustainable Energy Communities
 - To support the emergence of European sustainable energy communities through increasing the use of local community planning for the efficient use of RES and conventional energy, demand-side management and associated mobility. And thereby contribute across Europe to
 - Reducing atmospheric emissions of carbon dioxide, sulphur, nitrous oxide and hydrocarbons
 - Reducing dependency on fossil fuels
 - Increasing the use of renewable energy and biofuels
 - Increasing energy efficiency and energy resource management
 - Improving competitiveness.
 - Enhancing the framework for the take-up of low carbon technologies

Ultimately the aim of the PEPESEC project was to provide impetus for establishing sustainable energy action planning as a recognised strategic work programme for the Association of Greater Manchester Authorities.

Greater Manchester consists of 10 municipalities and is therefore easily suited to the Covenant of Mayors initiative. Currently only Manchester City Council (one of the ten) has signed up to join the Covenant of Mayors.

The Energy Planning process in Greater Manchester has made use of the GRIP (Greenhouse Gas Inventory Protocol) Scenario tool, working with stakeholders to map pathways to carbon descent to 2050 and 2025. This tool is recommended for use by the Covenant of Mayors.

It is planned that the final Energy Plan for Greater Manchester will contain all the constituent elements required under the Covenant of Mayors.

Step 2. Design of local Energy Planning

Overview of the scope of Energy Planning

The body that makes the final decision on Greater Manchester's Energy Plan is the Association of Greater Manchester Authorities (AGMA) Executive. During 2008/09 AGMA has established a number of thematic Commission to better co-ordinate strategic activity and drive progress across the 10 constituent authorities. This includes the Environment Commission which was formally established in March 2009, which co-ordinates strategic programmes on energy and climate change.

Greater Manchester's Environment Commission started work in 2009 with 19 board members co-ordinating with partner organisations to tackle climate change, energy, water, green infrastructure, transport, waste and other issues.

Vision: to move Greater Manchester from red brick to green brick; to build on our former industrial heritage to a future that is ever greener and cleaner.

Role: To:-

- prepare and co-ordinate the delivery of strategic plans and projects;
- work with organisations which impact on GM's environmental performance;
- help to co-ordinate and deliver an effective response to climate change;
- help to develop a comprehensive city regional sustainable waste management approach.
- provide a forum for the discussion and consultation on environmental matters of common concern and interest.
- channel views to the Local Government Association, central government and other bodies and organisations, and provide a means of contact and liaison with institutions of the European Communities, to advance the interests of Greater Manchester in Europe and elsewhere in the world.

Due to the cross-cutting nature of environmental issues, the Environment Commission works in collaboration with all AGMA Commissions and other organisations

In May 2009, the first full meeting of the Environment Commission approved the development of energy plan for Greater Manchester. This was later endorsed by the AGMA Executive in June 2009.

Links to other programmes and policy

In March 2009, Greater Manchester was named as one of 2 city-region pilots in the UK. The aim of the pilot is to see how Central Government giving groups of local authorities additional freedoms and flexibilities can help them better drive economic growth and contribute to sustainable development. It will help Greater Manchester to tailor programmes at a local level to meet our own economic, social and environmental needs and to have a direct and more dynamic hand in the future of our city region.

In 2009 AGMA Executive launched the Greater Manchester Strategy which positions Greater Manchester's priorities in terms of sustainable economic development. It contains a dedicated chapter on delivery of a low-carbon economy and an aspirational target a '30-50% cut in absolute emissions which contributes to economic growth and improves quality of life'.

The AGMA area has a Passenger Transport Authority/Executive with responsibility for co-ordinating the provision of public transport where the market does not provide sufficient cover. It also co-ordinates the production of the Local Transport Plan for the city-regional, with modular components for each of the 10 Authorities. It is a 5-year strategy for the management, maintenance, development and monitoring of the County's transport system. It forms a bid to central government for the resources required to implement the

plan. The Greater Manchester Transport Unit assesses the CO₂ impact from transport, as part of the Air Quality Management Plan process.

The AGMA area also strategically co-ordinates the disposal of municipal wastes under the Greater Manchester Waste Disposal Authority. In its Climate Change Action Plan (2009) it has set annual targets to increase carbon emissions savings from approximately 80,000 (this would be 92,000 if waste reduction was included) tonnes of CO₂ per annum in 2008/09 to approximately 370,000 tonnes in 2015 and approximately 400,000 tonnes in 2020.

Each of 10 local authorities have varying degrees of Climate Change Action Plan, each with its own set of metrics and targets. These are being mapped and assessed as part of the energy planning process. The common metrics associated with carbon management are National Indicator 185 (municipalities own emissions) and 186 (all municipality emissions per capita).

Other energy work includes the innovative report entitled **The Mini Stern: The Economic Impact of EU and UK Climate Change Legislation on Manchester City Region and the North West** (2008), which identified the potential cost of climate change to Manchester city region at an estimated £21 billion by 2020. The title refers to the national **Stern Review on the Economics of Climate Change** (2006), an internationally groundbreaking report on the nature of the economic challenges of climate change and how they can be met, both in the UK and globally; in the 'Mini Stern' this was translated for the first time to a local level.

Overview of co-ordination of energy planning

The independent city-regional body, Manchester: Knowledge Capital is co-ordinating the production of the energy plan on behalf of the Environment Commission. The Environment Commission Executive Team has a policy lead officer for energy, to which Manchester: Knowledge Capital reports to. Of the Environment Commissioners a lead Commissioner has been appointed for Energy.

At the time of writing (November 2009) the Environment Commission is in the process of establishing an Energy Group featuring high level representatives from the utility companies, wider energy sector and politicians. Complementing this is a cross-commission (energy, waste, transport, water, digital) infrastructure network of public sector programme managers.

When fully established the Energy Group will oversee the completion of Greater Manchester's Energy Plan, before seeking endorsement from the Environment Commission and approval by AGMA Executive.

The significant restructuring of Greater Manchester's governance structures during the PEPESEC project has proved a challenge to maintain the profile of the PEPESEC project and fully integrate into the Energy Planning work into work programmes. This has been achieved, but with the result of an elongated energy plan development process.

Step 3. The Energy Planning Process

Participation and commitment

The detailed research and data gathering has been lead by the small team (1-2 FTE on energy planning) based within Knowledge Capital Ltd. This has been supplemented with expert input from Tyndall Centre Manchester and the Manchester University spin-out company Carbon Captured.

Research and analysis

The analysis of the present energy situation was conducted by the Manchester: Knowledge Capital Ltd., overseen by Dr Sebastian Carney of Carbon Captured Ltd. As part of a joint work programme with the Tyndall Centre Manchester, which is at the forefront of national and international climate change research.

In Greater Manchester in 2005 we consumed some 66 terawatt hours (TWh) of energy to meet our demand for heating / cooling, power generation, transport (excluding aviation) and industrial processes. In 2005, these inputs to our energy system resulted in emissions of 17 megatonnes carbon dioxide (MtCO₂). This is shown in graphical form overleaf in the resource flow diagramme.

Greater Manchester's 'energy balance' and resultant CO₂ emission show that:

- Gas is the largest fuel source consumed, transport fuels are the second largest
- The fuel mix and methods for generating electricity are more carbon intensive than gas for heating / cooling
- The Domestic sector is the largest consumer of energy at 40% (excluding transport)
- The Industrial and Commercial sector consumes around 35% of energy (excluding transport)

Transport (all sectors) accounts for 25% of energy consumed

The fuel mix for electricity generation and supply shows that:

- The UK is currently heavily reliant on fossil fuels with gas supplying 37.7% of electricity and coal supplying 35.8%
- In 2005, the fuel mix and methods for generation consumed 1,257,290 GWh of energy, which supplied 365,067 GWh of electricity (29% of energy consumed in generation) and resulted in an overall heat loss of 897,222 GWh (71% of energy consumed in generation).

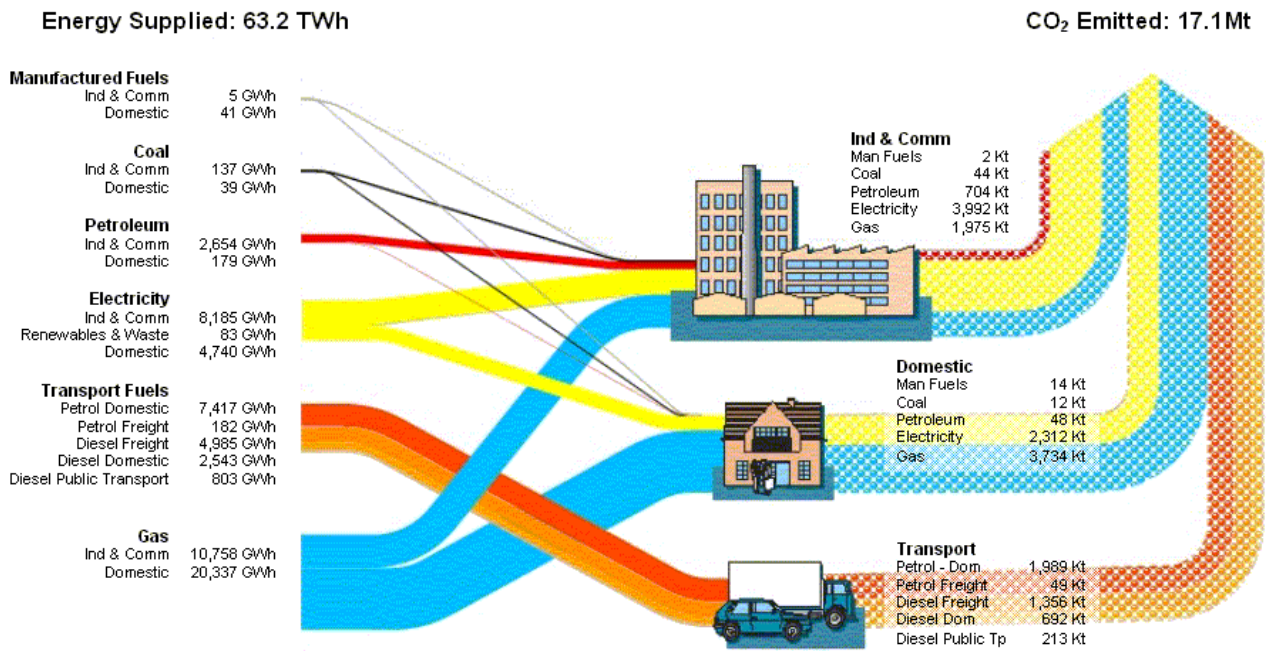
Target Setting

The Greater Manchester Strategy has aspirational target of achieving a 30-40% reduction of total emissions by 2020.

The energy planning process has identified the need to develop a series of sectoral carbon emission reduction targets and targets for generation of energy from renewables and decentralised energy. It is hoped that high level targets can be identified and agreed by June 2010, through the PEPSESEC project.

The PEPSESEC project will represent a first step in this process feeding wider work to be overseen by the newly forming Energy Group. This reflects the significant work required to develop a robust and detailed energy plan for a city-region serving a population of 2.6million people.

Greater Manchester's Energy Balance, 2005 Energy Supply and CO₂ Emissions



Sources:
 DECC Total & Final Energy Consumption at Regional and Local Authority Level, 2005
 DEFRA Company Guidelines to DEFRA / DECC GHG's Conversion Factors for Company Reporting



Target Setting

Strategic analysis undertaken by the Tyndall Centre has shown that due to the make up of Manchester's emissions, it would need to achieve a 90% reduction by 2050 in order to achieve the UK's 80% target, based on the expected sectoral reductions projected in the UK's Committee on Climate Change's analysis.

The Greater Manchester Strategy has aspiration target of achieving a '30-50% cut in absolute emissions which contributes to economic growth and improves quality of life'. This is consistent with targets identified by Tyndall Centre.

The energy planning process has identified the need to develop a series of sectoral carbon emission reduction targets and targets for generation of energy from renewables and decentralised energy. It is hoped that high level targets can be identified and agreed by June 2010, through the PEPESEC project.

The PEPESEC project will represent a first step in this process feeding wider work to be overseen by the newly forming Energy Group. This reflects the significant work required to develop a robust and detailed energy plan for a city-region serving a population of 2.6million people.

Actions identified within the energy planning process

The energy plan is seeking to identify high level (city-region level) interventions. Some of these have been identified through parallel processes in the waste, transport and land-use planning fields. A new initiative to seek designation of Greater Manchester as a Low Carbon Economic Area for the Built Environment has identified a series of interventions to accelerate the realisation of national targets proposed under the draft national Heat and Energy Saving Strategy (HESS).

The PEPESEC project is in the process of collating all these headline actions to inform a single energy plan for Greater Manchester. Stakeholder sessions will then seek to identify additional actions required. This is due to be completed in April 2010.

In parallel Manchester Knowledge Capital will be utilising the learning from the PEPESEC Energy Planning process to inform the development of wider more detailed energy planning at city-regional level.

Interaction between the different stakeholders of the programme

Research of the current energy situation

Over 30 meetings have been held with representative of key public and private organisations with direct relevance to energy management. Sectors covered include energy, waste, transport, housing, planning, economic development.

Scenario Development – social learning using the GRIP scenario tool

During October and November 2009, 3 future energy scenario planning sessions were held involving 21 stakeholders from municipalities, energy companies, the Environment Commission and NGO's. This was developed and delivered in tandem with Tyndall Centre Manchester using the services of Dr Sebastian Carney of Carbon Captured Ltd. The process was endorsed by the lead Environment Commissioner for Energy.

Stakeholder Workshops – planned for March 2010

These will be held to help build the action plan element of the energy plan. Support has been secured from Tyndall Centre Manchester for this process.

Citizen Consultation – Planned for April-May 2010

This will consist of 3 elements:

- Citizen's panel – to test emerging energy plan action plan priorities with a group of citizens acting as 'cabinet for Greater Manchester'.
- NGO and community stakeholder group face-to-face questionnaires – used to test emerging energy plan action plan priorities
- Web-based questionnaires of individuals who have taken a personal climate change pledge – used to test emerging energy plan action plan priorities

Whilst not constituting a formal public consultation of energy plan the Citizen Consultation shall provide new learning of the public acceptability of proposal emerging from the energy planning process.

Step 4. Outcomes and results

Follow-up plan of set targets and actions

The targets that will be set out in the plan will be based on statistics published annually by the national government's Department of Energy and Climate Change. Progress against these statistics is monitored

yearly.

The process for reporting of progress and monitoring will be defined by the newly forming Energy Group for Greater Manchester and the Environment Commission.

Dissemination of the set energy plan

The dissemination of the energy plan will be defined by the newly forming Energy Group for Greater Manchester and the Environment Commission.

Performance indicators according to the PEPSESEC-contract

Energy plan ratified and agreed to action by senior decision makers (mayors or similar):

Ratification by Energy Group / Environment Commission / AGMA Executive: *Expected May/June 2010.*

Targets until year 2020:	By 2020
CO ₂ savings in tonnes	TBC
CO ₂ savings in percent of total	30-40%
Potential renewable energy and targets in MWh per year	TBC
Potential renewable energy and targets in percent of total energy demand	TBC
Targets agreed for uptake of biofuels in percent	TBC
Potential energy savings targets in MWh per year	TBC
Potential energy savings targets in percent	TBC

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- ‘Northwest Regional Spatial strategy’, Government Office for the North West (2008)
- ‘Low Carbon Transport: A Greener Future’, Department for Transport (2009)
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- ‘Mini Stern’: ‘The Economic Impact of EU and UK Climate Change Legislation on Manchester City Region and the North West’, Deloitte (2008)
- ‘North West Climate Change Action Plan’, 4NW (2007)
- ‘Assessment of Potential Carbon Savings Achievable in the North West Region by 2020’, 4NW (2009)
- ‘Greater Manchester Strategy’, Association of Greater Manchester Authorities (September 2009)

Attachments

- *Energy Planning Flyer*
- *Public opinion of city-level options and climate change*

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Energy Planning in Manchester City Region

Partners

Energy planning in Greater Manchester is being enabled by:



Partnership Energy Planning in Europe

Energy Planning in Manchester City Region is supported by the European Commission's Intelligent Energy in Europe programme through the PEPESEC project.

The Project

Lead by Manchester City Council's Digital Development Agency, the PEPESEC Project brings together municipalities, agencies and consultancies across Europe to pilot energy planning in 9 areas.
www.pepesecc.eu

The Partners

UK

- Manchester City Council (MDDA)
- Manchester: Knowledge Capital
- Oldham Council

Sweden

- Skåne Energy Agency
- City of Malmö

Italy

- City of Genoa

Spain

- City of Murcia

Poland

- FEWE
- ISD

Greece

- City of Amaroussion
- City of Thessaloniki
- Exallon

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Partnership Energy Planning
as a tool for realising
European Sustainable Energy Communities

Intelligent Energy Europe

Contract No: EIE-07-179-S12.466281



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Energy Planning is a process widely practised across Europe.



The renovation of the **Gårdsten** suburb of Göteborg won the UN World Habitat Award, 2005. Significant energy savings have been achieved through effective energy planning in this landmark development.



Hammarby Sjöstad in Stockholm is a 200ha former brownfield site now transformed into a modern, sustainable, low carbon neighbourhood. The project has already delivered homes for almost 10,000 people and will deliver 9,000 homes and 10,000 jobs by 2015.

What is Energy Planning?

Energy planning is process that assists city leaders and managers develop the coherent, evidence-based and prioritised action plans needed to shape a more resilient energy system, better able to meet and manage today's demands for heating, electricity and transport with fewer emissions and reduced environmental impacts.

The European Commission sees energy planning as a valuable tool that helps deliver a more secure, more economically responsive and less environmentally damaging energy system.

The Energy System

Energy planning requires us to conceptualise a whole energy system. In addition to the infrastructure associated with the generation of electricity, energy supply and distribution this energy system includes:

- energy sources / fuels
- transportation of fuels and heat;
- transport network and vehicles;
- homes, buildings, commerce and industry and their demand for energy;

It also needs to consider how we use and manage our buildings, vehicles and goods. The energy system therefore includes people as consumers of energy both at home, in our leisure activities and at work.

Our policies strategies and plans can also be considered as integral to the energy system concept. All of these aspects affect our supply, demand and hence use of energy.

The Energy Planning Process

Energy planning is a process widely practiced throughout Europe, which involves:

- Building Political / Organisational Support
- Research and analysis of our current energy situation
- Developing future energy scenarios and targets
- Identifying the environmental impact of the current energy situation and future energy scenarios
- Creating an energy action plan through identifying the short, medium and long term actions required to reach those targets
- Obtaining political approval for the plan
- Implementation and monitoring

Critical to the success of the process is the engagement and involvement of stakeholders whose ownership is needed to implement the action plan.

'Sustainable energy planning and management reduces our energy consumption and increases our reliance on renewable energy sources. Over half of the energy consumed in the UK is a result of the construction and operation of buildings, so design has a direct impact on the amount of energy used.'

The benefits of sustainable energy planning and management include reducing greenhouse gas emissions, creating and future proofing (in an economic, social, and environmental sense) comfortable, healthy environments and reducing energy bills, leading to enhanced social equity.

Local Authorities can support better energy planning and management by valuing reduced energy demand, retrofitting existing buildings and using decentralised energy systems.'

CABE www.sustainablecities.org.uk/energy

Piloting Energy Planning in Manchester City Region

In the UK the Climate Change, Energy and Planning Acts of 2008 increase the demands on public agencies, utilities and local authorities to put in place action plans to modernise the way we supply, distribute and use energy. The goals driving these improvements are increased energy security, economic advantage and reduced CO2 emissions.

This challenge is being met by a partnership of organisations which has secured resources from the European Commission's Intelligent Energy in Europe programme to pilot energy planning in Manchester city region.

Harnessing Expertise

The energy planning process will build on the results from the Association of Greater Manchester Authorities' (AGMA's) decentralised energy study, lead by Faber Maunsell, URBED and Quantum Strategy and Technology, that is informing planning guidance for new developments.

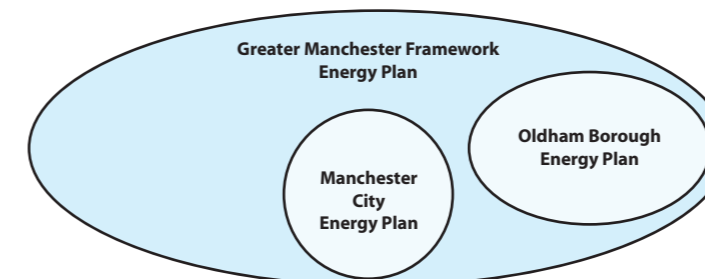
During 2009/10 expertise, drawn from international leaders in the field, will enable and support the engagement of stakeholders to co-create a coherent future energy vision for the city region. This will be supported by the development of evidence-based and prioritised action plans that will help guide future investments and interventions.

Formal reporting to AGMA will take place through the newly-formed Environment Commission for Greater Manchester.

The Pilot Areas

With resources secured from Europe, the Northwest and Greater Manchester, the Energy planning will be piloted at city-regional level, and local authority level in Oldham and Manchester.

The learning gained will be shared throughout Manchester city-region and beyond.



Manchester's Multi Area agreement and Deloitte's 'Mini-Stern' for Manchester both recognise the role of energy planning in modernising the city-region's critical infrastructure and gaining local economic advantage.

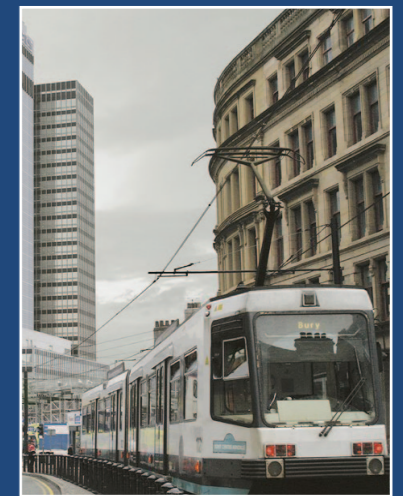
'It is proposed to expand energy planning work currently being led by two local authorities across Greater Manchester. This work will inform the approach to be taken in respect of the new decentralised clean energy production and supply that are important to future economic growth and prosperity'

Manchester's MAA, 2008



'New approaches to energy generation and distribution are required and a more comprehensive approach to energy planning creates a significant economic opportunity for Manchester City Region.'

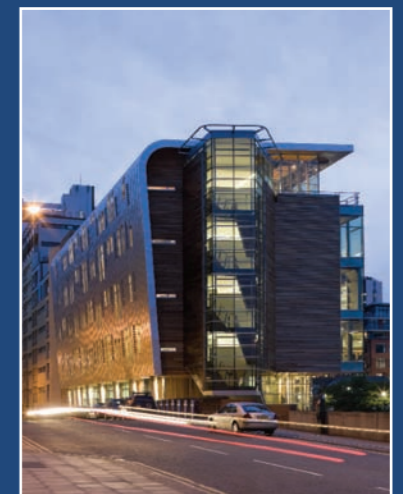
Deloitte, 2008



Identifying the energy challenges and opportunities relating to transport are all part of the energy planning process.



Great Places Housing Association's Selwyn Close development in Oldham, features 18 BREEAM Eco-Home Excellent rated family homes.



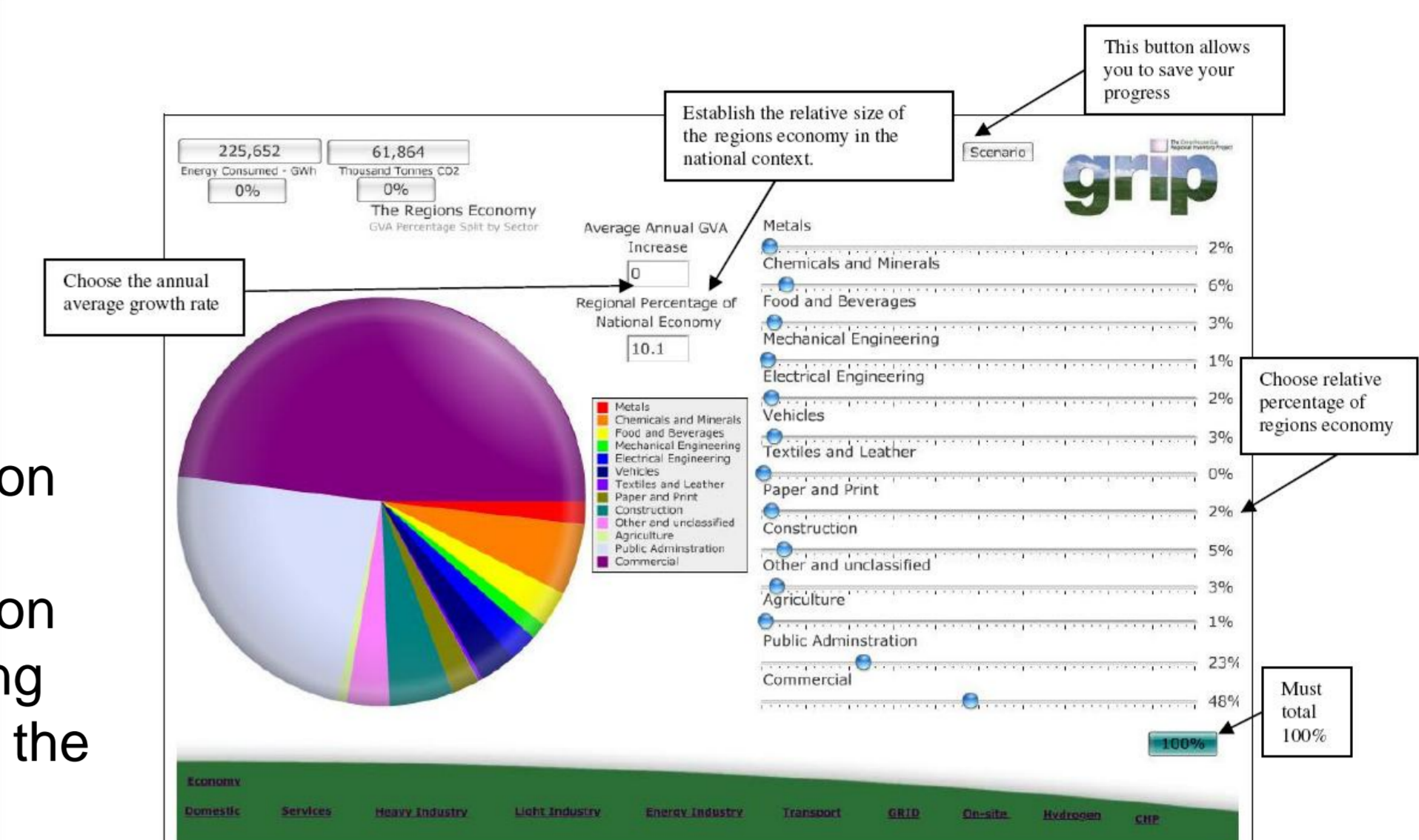
BDP's Manchester office features a natural ventilation system which warms and cools the building without the need for heating or air-conditioning.

Shortlisted for MIPIM's Green Building Award, 2009

Hydrogen in Context: public opinion of city- level energy options and climate change

Dr Paul Upham, Tyndall Centre Manchester
Dr Sebastian Carney, Centre for Urban and Regional Ecology
University of Manchester

Stakeholder opinion on city-level CO₂ emissions reduction options is informing focus groups with the public



Studies of public opinion of energy policy tend to use either relatively abstract, in-principle questions; focus on one energy topic at a time; or focus on particular controversies (be these issue-based or related to particular development projects). This is understandable: energy policy is a complicated field with multiple connections across many policy domains; use of simplified psychological and sociological research designs is a way of removing this complexity.

However, the difficulties involved in confronting citizens with the need to consider trade-offs, regulatory barriers and other practicalities in energy policy, means that public opinion is often elicited in a narrow context. In short, despite a substantial literature on energy attitudes derived through case studies and surveys, it is not always clear how reliable this is as a means of anticipating public reactions to policy initiatives and development projects.

During 2010, this project will investigate citizen attitudes to energy policy in ways that encourage awareness of trade-offs, contingences and climate urgency. The focus is on public attitudes to policy and technology options that are relevant to the familiar environment of the city and also the relatively recent knowledge that global average surface warming of +3 to 4 degrees C by 2100 appears increasingly likely. UKSHEC researchers are collaborating with the Intelligent Energy Europe project: "Partnership Energy Planning as a tool for realising European Sustainable Energy Communities" (PEPESEC), co-ordinated locally by Manchester Knowledge Capital. This collaboration began in late 2009 with three stakeholder learning workshops using the GRIP energy scenarios tool, the results of which will be used in the focus groups.



Dr. Sebastian Carney facilitating stakeholder energy scenario workshops in Manchester with GRIP energy scenario software

Sub-project 1: Citizens' panels on city-level energy policy options

In this sub-project, three focus groups, with the option for additional citizens' panels, will investigate public responses to city level energy policy options as identified in the EU PEPSEC project, with consideration of additional options relevant to a longer time horizon (including hydrogen).

The aim here is to set alternative and complementary policy and technology options in a familiar context, and to encourage a perception of the options as realistic rather than hypothetical, abstract and in-principle.

We aim to facilitate this perception through collaboration with PEPSEC, work for which will provide a list of plausible near-term options for discussion and which is providing a set of stakeholder scenarios on possible carbon reduction pathways.

Sub-project 2: Pro-environmental citizen opinion on city level energy policy options and stark climate change science

This sub-project will use a large-scale database of some 21,000 people involved a climate change pledge scheme run by the 'Manchester is My Planet' public engagement programme.

As respondents can be assumed to have some pro-environmental disposition (an assumption that will be checked via an environmental attitudes scale), the survey results will provide a comparator to the focus group findings. They will also enable observation of any demographic correlations and other patterns of response.

In addition to questions on energy policy options, we will also investigate the role of constraining contextual factors, reactions to stark climate-related information and the influence of these on energy policy attitudes.