

## MCC Economy Scrutiny Committee

**DATE:** 22<sup>nd</sup> May 2013  
**SUBJECT:** Investing in Green Growth for Greater Manchester  
**REPORT OF:** Mark Atherton, GM Director of Environment  
[Mark.e.atherton@oldham.gov.uk](mailto:Mark.e.atherton@oldham.gov.uk)

---

### PURPOSE OF REPORT

The purpose of this report is to provide an overview of the Greater Manchester Low Carbon Hub, the GM low carbon sector and emerging portfolio of low carbon investments being developed to support Manchester's sustainable economic growth and transition towards a low carbon economy, whilst protecting the vulnerable and increasing prosperity.

### RECOMMENDATIONS

Members are requested to:

- Note and comment upon the progress made;
- Provide advice and suggest priorities to inform the Hub's current business plan development process.

## 1 BACKGROUND

1.1 Recent research suggests that sales from Low Carbon Environmental Goods and Service (LCEGS) sector businesses in Greater Manchester (GM) are already in excess of £5bn p.a. and that the sector is expected to continue to grow by 4% per annum. We have high ambitions for continued low carbon economic growth in GM, capitalising on our existing strengths. By 2020 global investment in the low carbon economy could be worth £335 billion. Greater Manchester's share of this market could be £1.4 billion per annum<sup>1</sup>:

- Greater Manchester has comparative advantage in the built environment with strengths also in contaminated land remediation, renewables and recycling and environmental consultancy;
- In building technologies, GM already has a market worth £516 million per year, employing 4,360 people. The renewable sector is worth £1.14 billion, with 9,457 people employed; and
- Greater Manchester also has world leading university and research capabilities in the low carbon built environment and electrical and

---

<sup>1</sup> The Case for Greater Manchester as a Low Carbon Economic Area, for the Built Environment, Ernst & Young 2009

mechanical engineering which are well placed to further innovate and test low carbon technology.

- 1.2 Importantly, transition to a low carbon economy also requires the public and private sectors to become more energy efficient. Significant cost savings are possible from resource efficiency either as a business or in wider society. Efficiencies can reduce operational costs including materials input, processing and waste disposal costs. £23bn annual savings are possible in UK businesses through improved resource efficiency requiring no or little investment. Stimulating resource efficiency and climate change adaptation measures will also create market demand for low carbon sector goods and services.
- 1.3. Greater Manchester has emerging plans for significant green growth in low carbon supply chains: areas such as building technologies, energy management and renewable energy generation, driven through investment in GM's low carbon infrastructure. The ability to deliver at scale lies at the heart of Greater Manchester's low carbon investment opportunity, with over 1.1 million housing units; over 900 schools; 23 Colleges; 5 Universities; 15 Hospitals and 91,000 businesses.
- 1.4 Any investment strategy will take into account the systemic nature of low carbon economic development. Investment in GM's low carbon infrastructure will be designed to stimulate research and innovation in low carbon technologies; support the growth and diversification of GM's low carbon sector businesses; create demand for up-skilling of the current workforce and create new employment opportunities. The importance of a well-structured and coordinated sector support programme, and conducive procurement framework, to support local businesses in the supply chain cannot be overstated.
- 1.5 As a result, we intend that Greater Manchester's low carbon sector of dynamic enterprises will grow faster than other areas of industry, fuelled by a strong partnership of government, business and higher education. Gaining significant economic benefit is intrinsically linked to achieving 'first mover' advantage.

## **2 WHY LOW CARBON TRANSITION IS REQUIRED**

- 2.1 The UK is the first country in the world to introduce a Climate Change Act with legally binding targets. Our progressive approach has given rise to innovation in businesses to tackle the problems and provide solutions. Greater Manchester is ideally placed to be an effective national and global leader of these developments, as the centre of the industrial revolution and as a historic transformer of social justice and public protection. Now the city region's industrial and academic base and rich history of successfully developing world leading innovation means the city has the skills and experience to respond to the burgeoning low carbon market opportunities.
- 2.2 The low carbon and environmental sector is maintaining growth rates of more than 4% in the UK despite the recession, and was recently cited by a

government minister as providing the single largest sectoral contribution to UK growth. This is because there are major economic driving forces behind the need for low carbon and environmental products and services, for example:

- The cost of emitting carbon will get increasingly expensive over this century.
- Energy costs will continue to rise; over the last 30 years energy costs have risen by 120% above inflation.
- UK gas supplies are diminishing. In 2011 the UK imported more gas than it produced for the first time since 1967 and oil production levels fell to the lowest levels since 1970<sup>2</sup>. Looking for alternative sources of energy is necessary to combat an overreliance on important fuel. Renewable energy and nuclear power offer us the greatest potential for domestic low carbon generation.
- Electrification of heat and transport is also the most likely option for reducing reliance on fossil fuels and reduce emissions in these sectors.
- Investment in smart grids to manage the greater demands on the electricity system will mitigate the need for even greater investments in additional energy generation and distribution infrastructure.
- Resource and raw material constraints will lead to rising costs for businesses. 29% of profit warnings from FTSE350 companies in 2011 were attributed to rising resource prices.
- The natural environment has economic value which could be realised in GM. The UN Environment Programme has calculated that in the UK the natural environment could add £30bn a year to the UK's economy if managed properly and cost more than £20bn if not.
- Transport congestion costs the UK's urban economies £11bn per year.

2.3 A recent GM business survey cites finance and productivity base as the most common barrier to growth identified by Manchester businesses. It also cites (by some margin) rising energy costs as the most significant cost pressure on their finance and productivity base. Energy costs are therefore considered critical to business viability in all sectors, but in manufacturing and food / accommodation and ICT most significantly (above 70%).

2.4 According to the Greater Manchester Mini-Stern, 4% of Greater Manchester's employment is within energy intensive manufacturing. The textile sector is currently seeing a revival across GM, but is an energy intensive sector with a narrow productivity margin which would be threatened by energy prices increases. Early evidence in work undertaken on analysing underlying reasons for business failure in companies entering administration suggest that increased fixed costs, mainly due to energy prices, are the most common reason for business failure; more commonly identified than access to finance, skills, talent or any other reason.

2.5 Gas price increases and volatility have increased the cost of household bills by over £400 in the last five years and 7% in the last year. The Committee for

---

<sup>2</sup> <http://www.telegraph.co.uk/finance/newsbysector/energy/oilandgas/9173373/UK-gas-imports-outstrip-production-for-first-time-since-1967.html#>

Climate Change (CCC) has launched a report which shows the impact on energy prices and household bills of meeting the carbon budgets and deploying high levels of gas fired power generation. Supporting the development of low carbon technologies could increase bills by £100 in 2020, but the costs will then tail off as the technologies mature. It is clear that due to rising extraction, process and transport costs, newly identified opportunities for fracked and natural gas simply increase the availability of gas, and slow the rate of increase in unit cost rather than deliver a long term reduction. Continued reliance on gas-fired generation carries the risk of electricity bills for the typical household being up to £600 higher using existing gas fuelled technologies than under a low carbon power system by 2050, setting aside the wider implications of emission control failure.

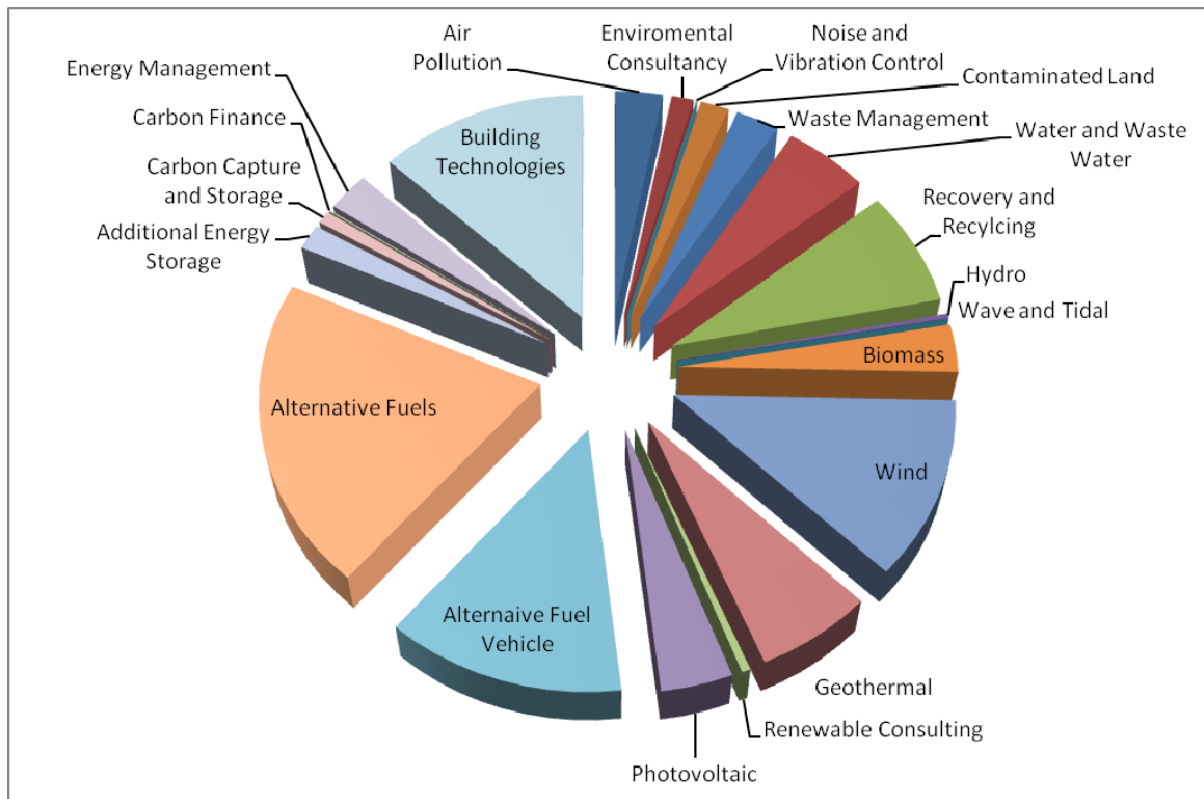
- 2.6 Average UK household energy bills are already approaching £1,300pa, further increases will have a significant impact on the spending power of all households in Greater Manchester and particularly impact the fuel poor. 241,000 households in Greater Manchester live in fuel poverty. Based on national trend analysis, this number could increase by as much as 50,000 by the end of this financial year, The Government's own Fuel Poverty Advisory Group estimated that 300,000 households entered fuel poverty in December and that 9 million will be in fuel poverty by 2016. There is a direct link between fuel poverty, health outcomes and life expectancy. Many GM households are already unable to heat their homes to a level to maintain health, resulting in negative health effects and / or rising fuel debt. Simple measures to cut energy use and access lower tariffs can provide a 15% increase in the disposable income of poorer households, and can increase the proportion of funds spent within the GM economy,
- 2.7 Transitioning to a low carbon, well adapted economy will make Manchester more resilient to future changes, more competitive in the increasingly global marketplace and reinforce Manchester's standing as leader in innovation.

### 3 GM LOW CARBON SECTOR

- 3.1 Currently there are 2,000 businesses employing 37,000 people supplying low carbon goods services in GM, with a market value is £5bn. This represents approximately 2% of the GM business base but the potential for future growth is huge. If the related, wider supply chain is also included, this could be as high as 7%.

*Table 1 showing the relative size and composition of the sector in GM*

	GM	NW	UK	Global
Sales (£)	£5bn	£12bn	£122bn	£3.2 trillion
Companies	2,000	5,000	52,000	
Staff	37,000	94,000	900,000	



- 3.2 Supporting these businesses and others that want to diversify into the sector will help catalyse early mover advantage, support innovation in manufacturing and expand the sector in GM. GM's greatest strength is the spread of activity across the range of the low carbon and environmental markets. As many of the markets are still emerging, having businesses operating in a number will make GM's business base more resilient and able to respond to opportunities.
- 3.3 The strong academic base of GM, in fundamental subjects such as electrical engineering, is an asset along with the research institutions based in GM. For example, the UoM's Sustainable Consumption and Production Institute, Tyndall Centre for climate change research, CURE's work on REAP consumption footprinting and climate change adaptation are recognised as world leading. Salford University is the UK's only six star rated Research Institute for the Built and Human Environment and MMU was ranked among the top academic institutions in Europe's Green Gown awards. Over £100 million per annum is spent on energy research alone within these institutions, second only in research income to biotech, which also has strong links to delivering low carbon solutions.
- 3.4 Big businesses located in GM are successfully exploiting a range of low carbon and environmental markets. For example:
- The Co-operative Bank operates an ethical business model. Co-operative Financial Services are also a market leading financier of renewable energy and low carbon projects;

- Siemens are a global supplier of energy efficiency products and services and a major player in the offshore wind industry. The Siemens' European Centre of Competence for offshore wind is also based in Manchester;
- Manchester Airport is recognised as one of the UK's most sustainable airports in operation, and the new enterprise zone is pursuing low carbon, innovative energy systems and solutions;
- The Peel Group has established Peel Energy to develop low carbon energy projects and developed what was England's largest wind farm on Scout Moor in Oldham and Rochdale; and
- Our electricity network operator, Electricity North West, are driving innovation in future smart energy systems and networks, and actively piloting and supporting the connection of energy innovations to its grid.

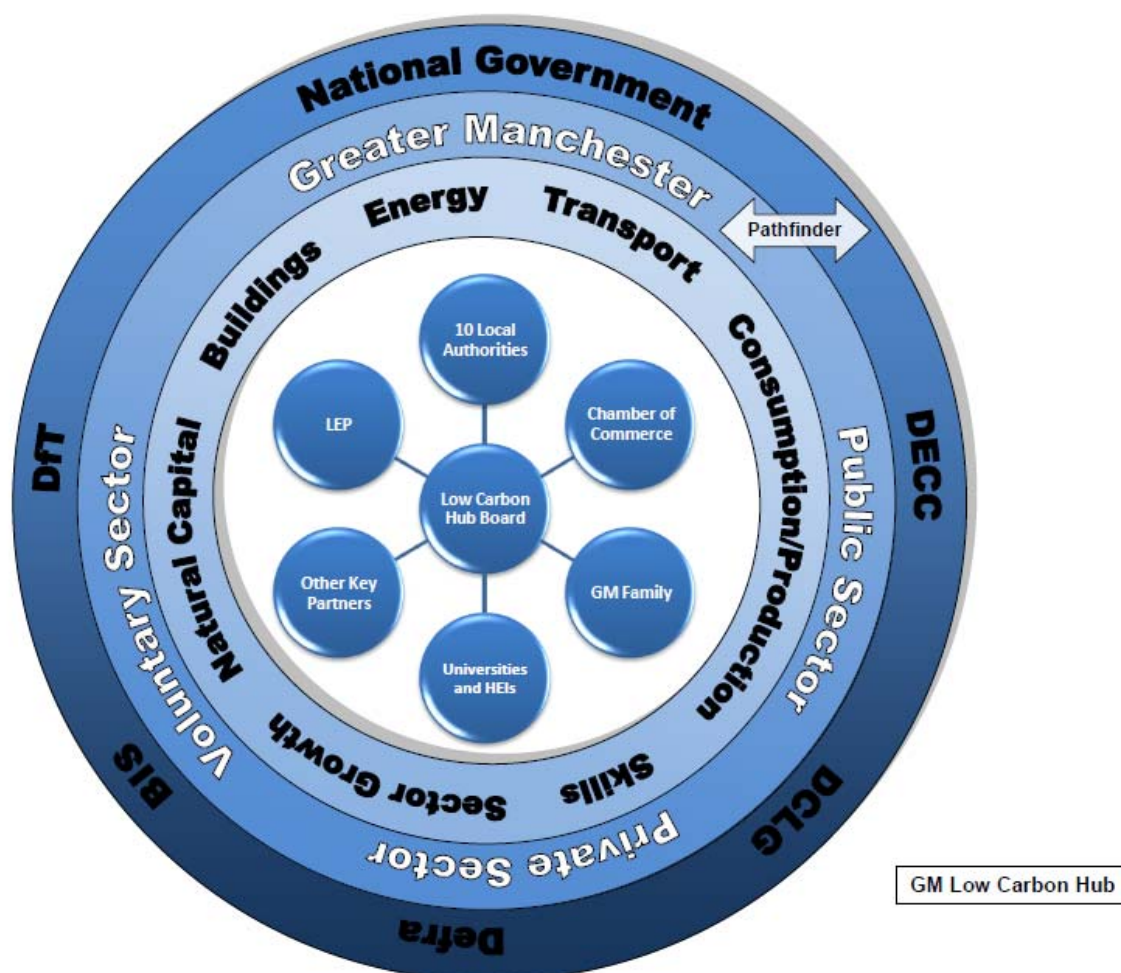
#### **4 Governance and Delivery – GM City Deal**

- 4.1 The Greater Manchester City Deal, agreed in March 2012, included a 'low carbon' priority area. The three key elements of this included:
- developing a low carbon hub;
  - establishing a joint venture with the Green Investment Bank; and
  - developing memoranda of understanding between GM and key government departments to deliver shared priorities.

##### **Low Carbon Hub**

- 4.2 The development of a Low Carbon Hub for GM has integrated the delivery of multiple carbon-reduction measures. It represents a shift from establishment of priorities by the Environment Commission to delivery, and is part of, and accountable to the GMCA's Governance structure. GM has embedded the Hub within the network of Greater Manchester Centres of Excellence and created strong private sector partnership support, building upon pre-existing partnership structures. The Hub aims to harness the knowledge of our universities with the innovation of our businesses under the strong public governance provided by the Greater Manchester Combined Authority.
- 4.3 The Low Carbon Hub (LCH) has been created to drive forward Greater Manchester's transition to a low carbon economy. The LCH has four primary aims:
1. realising the economic potential associated with the transition to a low carbon economy
  2. supporting GM's 48% carbon reduction target by 2020
  3. increasing awareness and understanding leading to behavioural change
  4. preparing GM to adapt to the unavoidable effects of climate change
- 4.4 A Low Carbon Hub Board has been established, Chaired by Sir Richard Leese, with Government, private and third Sector representation. The role of the Board is to set strategic direction, overcome barriers and evaluate progress. The majority of the Board members chair one of the Hub's subgroups. A small core team of Officers has been established to manage the relationship between the Hub, it's sub groups and existing key stakeholders.

- 4.5 The Low Carbon Hub has established five Thematic Groups. These Thematic Groups reflect the five priorities set out in the Greater Manchester Climate Change Strategy. Two additional groups have been formed to address the cross cutting issues of skills and sector development. The sub-groups each have a relationship to the wider GM private, public and third sector (middle ring - see diagram below) through their membership, associated networks and communications vehicles.
- 4.6 It is anticipated that a partnership agreement or “Pathfinder” will be developed between the Low Carbon Hub Board and each Government Dept. (the outer ring).
- 4.7 While there is still considerable scope for expansion, the Hub model has already started to yield significant access to GM partner’s capacity, resources and expertise, with hub and sub group members increasingly leading, working on and, in some cases, co-financing priority activities. A small number of officers from across local government and the GM family are currently undertaking task and finish projects to support hub priorities.



**Key**

Inner Hub – Environment Commission, Hub Board and Core Team

Radial Hub – GM Centres of Excellence, GM Authorities and established Public/Private sector partners

Inner Ring – Existing and proposed Theme Groups

Middle Ring – Wider Greater Manchester Public, Private and Voluntary Sector

Outer Ring – Government Departments

Pathfinder – Memoranda of Understanding between GM and relevant Government Depts.

## **5 JOINT VENTURE WITH GREEN INVESTMENT BANK**

5.1 AGMA and UK Green Investments (UKGI) have established a project to create a joint venture with the objective of creating a delivery approach for the development and execution of low carbon infrastructure and related low carbon technologies in Greater Manchester. This will be capable of attracting and deploying private capital, both equity and debt. In achieving this objective the Joint Venture will:

- develop a delivery approach that attracts low carbon investment which is supported by public and/or private capital;
- identify appropriate links between projects within Greater Manchester and create bundles of opportunity that are attractive to the market;
- develop an approach that attracts development partners and fund managers to finance project development and take projects to financial closure;
- undertake procurement and contracting work to establish appropriate joint venture structure and delivery vehicles;
- develop and recommend appropriate delivery vehicles for individual projects; and
- develop solutions that are capable of replication across local authorities throughout the UK.

5.2 A core principle of the JV will be to create a sustainable delivery approach for the development and execution of future low carbon infrastructure and related technologies in Greater Manchester. AGMA is developing a high level portfolio of potential low carbon projects, currently valued at approximately £320 million, which we would like to see delivered in the GM area. A review of the portfolio and the broader GM low carbon investment opportunities has been undertaken by consultants jointly appointed by AGMA and UKGI. Emerging investment opportunities across GM have been identified as:

- Domestic retrofit programmes (Green Deal);
- Heat Networks;
- Public sector retrofit; and
- Energy efficient street lighting.

5.3 Work is now being undertaken to refine these proposals and develop an appropriate approach for engaging private sector developers/fund managers who have the capacity to develop and finance the project opportunities within this broad portfolio.

## **6 MEMORANDUM OF UNDERSTANDING WITH DECC**



- 6.1 As part of the GM Deal for Cities, a 'Pathfinder' memorandum of understanding has been developed between GM and the Department for Energy and Climate Change (DECC). The MoU includes a detailed action plan, agreed by DECC and GM on 29th October. Some of the identified action areas provide access to available DECC funding. Greater Manchester is now also one of the partners in DECC's Pioneer Cities programme, a framework for dialogue between the department and a small number of cities that facilitates joint testing and piloting of initiatives and technologies.
- 6.2 To date, approximately £4 million has been secured from DECC for the delivery of projects within Greater Manchester during 2012/13 across Green Deal Go Early, heat networks and energy switching projects:
- **Green Deal Go Early:** £3 million to deliver a 'demonstration' portfolio of domestic retrofit.
  - **Heat networks:** Funding of £330,000 for 3 feasibility studies; one in Manchester.
  - **Energy Switching:** With average savings of £120 per year for those signing up to the recent auction, reaching 57,000 homes over two auctions, an innovative model designed by Oldham which raises a community energy fund and provides co-delivery of Green deal, fuel debt and energy switching advice has been deployed across GM, with Manchester being funded to host the Energy Advice call centre and campaign design hub activities.
- 6.3 GM is also working with Government to devise, pilot and measure pathways to achieve the objectives of the Greater Manchester Climate Change Strategy (GMCCS), particularly those that relate to a rapid transition to a low carbon economy and the 48% carbon reduction target by 2020.
- 6.4 Similar 'Pathfinder' agreements are in preparation with Defra and DCLG.

## 7 LOW CARBON PROJECT PIPELINE

- 7.1 A long term strategic approach to this agenda is vital if GM is to realise the economic and environmental benefits. However, it is important to develop some short-term 'quick wins' to give a signal to the markets and increase their confidence in investing in GM. Three investment opportunities are further advanced than the others:

### **Green Deal**

- 7.2 The Green Deal is the coalition government's flagship environmental policy, finally launched in January 2013. AGMA authorities have taken a leadership role in the GM Green Deal; kick-starting a GM focused approach over 3 years that will help our poorest and most vulnerable households; improve our coldest homes; and drive economic opportunities and benefits for local businesses.

- **ECO investment:** The GM Green Deal model, delivered across 15,000 houses, will attract an estimated £16.5m of ECO, to support our poorest neighbourhoods, fuel poor households and leakiest homes.
- **Economic development:** Using Energy Saving Trust methodology, the impact of the 15,000 GM model is estimated in Table 2 below:

<b>Table 2 Based on 15k households in GM over 3 years</b>	<b>Number of potential measures.</b>	<b>No. of jobs supported (fte)</b>	<b>Total Cost of delivery</b>	<b>GVA.</b>
<b>Impact in direct supply chain</b>	24,345	686	£65,834,000	£23,041,900
<b>Overall impact based on wider supply chain</b>		1,077	£105,334,400	£36,867,040

### Electric Vehicles

- 7.4 The Government has formulated a strategy to promote electric and plugged in hybrid vehicles and part of this strategy includes promoting the development of electric vehicle charging infrastructure across the country. The Plugged-in Places (PIP) programme, administered by the Office for Low Emission Vehicles (OLEV), is currently funding a range of projects across the country to support the implementation of electric vehicle charging infrastructure. Greater Manchester was awarded an OLEV grant and is now in the process of installing approximately 150 EV charging posts across the Greater Manchester conurbation. Creating the infrastructure for EVs will significantly support market development of the technology.

### EnWorks Business resource Efficiency Programme

- 7.5 The ENWORKS Programme has provided businesses, primarily SMEs, with funded advice and support on environmental risk and resource efficiency for over ten years. This is in direct response to the well documented multiple market failures which are at play on this agenda. ENWORKS delivers a combination of direct one to one advice and light touch interventions, identifying efficiency opportunities and supporting companies to improve their economic performance whilst at the same reducing their carbon emissions and wider environmental impacts. While some recommendations are no and low cost, around 45% require some form of capital investment.. Examples of GM businesses which have achieved savings through Enworks support are provided at Annex 1.
- 7.6 For an agreed investment of £860k from GM Investment Funds, matched with ERDF funding, the Enworks project will create net additional GVA of £52m over two years, create 8 jobs in ENWORKS and 45 jobs in the companies it supports and safeguard a further 7 jobs in ENWORKS and 115 in the companies it supports. Other direct project deliverables include: engaging

with over 1,000 companies, 254 of which will be supported to an intermediate level, identifying annual cost savings of £17m, 50,000 tCO<sub>2</sub>e, 250,000m<sup>3</sup> water, 16,000t raw materials and diverting 55,000t waste from landfill. Importantly, the Enworks programme will be tailored to GM's strategic needs and will include a small low carbon sector development programme.

## **Emerging Opportunities**

- 7.7 In a UK first, Greater Manchester has agreed a unique partnership with the Japanese Government Agency NEDO, who are responsible for Energy and Technology Research. In December 2012 DECC, BIS, GMCA and NEDO agreed a letter of intent which, subject to feasibility, will result in £20 million of NEDO funding for innovative smart heating trials in GM's social housing.
- 7.8 The Hub Team are also developing opportunities for hydro and wind energy deployment, hydrogen fuel cell feasibility, innovative reforms to public sector power procurement to both cut costs and release investment into new generation and combined smart heat and network trials. It is also supporting partners to deliver over £15 million in GM based energy innovation projects, and partnering or endorsing bids to secure further European and UK funds to deliver projects on heat networks, heat system innovation, doctoral research centres for power systems and cutting edge energy system design and visualisation tools.

## **8 NEXT STEPS**

- 8.1 Whilst an infrastructure delivery model can be developed to provide a proportion of the capital costs needed for certain projects, there remains another key challenge: projects need significant development work to get them to market for investment. Local authorities may not possess the necessary skills, knowledge and experience in undertaking this work as the skills, principally around engineering, finance and legal remain within the private sector. Consideration is required as to how this expertise can be secured to support the development of projects in the long term through the Joint Venture with Green Investment Bank
- 8.2 A fuller set of investment options needs to be worked up in more detail to encompass the totality of GM's low carbon infrastructure pipeline development and delivery capacity, taking into account other public sector funds, including the European Union's Intelligent Energy Europe (IEE) fund and the EU ELENA programme, where revenue funding can be accessed and used as initial 'seed funding' for the developmental work.
- 8.3 Despite the huge market opportunities there are still barriers to GM companies making the most of the opportunities. For example not all companies are aware of the opportunities or understand how they fit into the supply chains. Companies with new products or services can face issues with getting their product accepted in the market place, especially when competing with well established incumbents. Developing new products and services is risky and not all companies have the resources to innovate by themselves. Our existing

mainstream economic policy, skills and business support facilities are not fully geared up or prioritised to meet the needs of this complex, cross cutting sector. A small sector development programme, aligned with Enworks, is considered a priority.

- 8.4 Despite the information we have about the number of businesses operating in the sector in GM information about the capabilities, the specific skills and offerings of the companies is patchy. Better intelligence would help inform policy and project development to ensure GM based investments stimulates the market in an appropriate way for GM businesses.
- 8.5 The Low Carbon Hub has made a good start in supporting GM in the transition to a low carbon economy and optimising the economic growth opportunities of achieving our carbon reduction targets. In the coming year this needs to be consolidated to ensure that the impact of the various measures described above are cumulatively greater than the sum of their parts. The schematic at Annex 2 shows how the Low Carbon Hub model can integrate policy development with programme delivery activity.

## **ANNEX 1 – Manchester Businesses Receiving Resource Efficiency Advice Case Studies**

**HMG Paints**, an SME based in Collyhurst, supplies paints and powder coatings to the transport, automotive and marine sectors and has saved over £159,000 to date by improving its resource efficiency with ENWORKS support. Of most significance is a new system for treating and reusing chemicals in-house which has reduced solvent-use by 72 tonnes and is diverting 25 tonnes of waste from landfill each year; this change is generating annual savings of £25,000 and will achieve a pay-back of just one year. Simple changes have also delivered results, including repairing leaks in the compressed air system to reduce electricity consumption and recycling used paint cans which have resulted in annual cost savings of £35,000 alongside annual CO<sub>2</sub>e savings of 780 tonnes.

**The Midland Hotel** in Manchester contacted a local ENWORKS adviser for advice on reducing its energy consumption and boosting its environmental credentials. As a result, four improvement projects have recently been implemented bringing annual cost savings of £86,300 to the hotel along with CO<sub>2</sub>e savings of 1,300 tonnes a year. The improvements include the introduction of a computer-based energy management system to monitor and control the use of electrical equipment; the implementation of a regular cleaning and maintenance schedule for all windows, lights and fittings, and a scheme to replace halogen spotlights with LEDs, to reduce electricity bills; and the reduction of thermostat settings by 1°C to minimise heating costs. The hotel's stance on environmental performance, and the awards it has achieved for its actions, are publicised on its website.

**Auto Marine Cables** in Worsley, Salford, is an SME specialising in low voltage automotive cables and cable wiring accessories for the European automotive and marine industries. ENWORKS has helped the business to improve its environmental credentials and thus retain a competitive edge when bidding for contract renewals; this has resulted in the retention of a £10 million contract, increased sales of £1 million and the safeguarding of 63 jobs and the creation of two more. The company's resource efficiency improvements include the purchase of new equipment that is saving 22 tonnes of PVC plastic, 32 tonnes of copper and 246 tonnes of CO<sub>2</sub>e per year during the manufacturing process. Other improvements have focussed on reducing packaging waste sent to landfill and optimising machine performance to reduce electricity consumption. Support to implement further recommendations – including lighting and equipment upgrades – is currently underway.

**ANNEX 2 – GM Low Carbon Hub – Development and Delivery Relationships**

