

# **Responding to the challenge of climate change**

## **The North West Business Leadership Team**

**A working document including an assessment of current  
practices and recommendations for action.**

**Prepared by**

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## **About the Author**

Gudrun Cartwright completed this project as part of an MSc in Environmental Management and Sustainable Development at Manchester Metropolitan University for which she achieved a distinction. Gudrun adds her knowledge and understanding of the challenge of sustainability to a wide range of skills and experience gained in a successful career as a Registered Nurse and Human Resources Manager.

Gudrun is now setting up her own business to promote understanding of what is required to achieve sustainability, work with others to develop effective strategies to address the challenge and facilitate co-operation and collaboration towards a sustainable future.



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**Responding to the challenge of climate change.**  
**The North West Business Leadership Team (NWBLT)**

**Executive summary**

Exceeding environmental limits

As a species we are consuming 2.2 global hectares (gha) of biologically productive land per person, 25% greater than the capacity of the planet, 1.8 gha. Average global per capita demand will be twice the available supply by 2050. People in the UK are already living beyond their means by a factor of 3.5. 2.8 billion People (45% of the human population) live on less than \$2.00 a day. 2007 sees humanity mainly living in cities for the first time.

Climate change

- A 2°C to 4.5°C temperature rise is seen as likely by 2100. Confidence is ‘very high’ (90%) that increased accumulation of Greenhouse Gases (GHGs) in the atmosphere, resulting from human activities, initiated this warming by increasing the greenhouse effect.
- If no action is taken to reduce greenhouse gas emissions (CO<sub>2</sub>E), concentration levels could exceed twice pre-industrial levels by 2035, virtually ensuring a 2°C rise and creating a 50% possibility that temperature will increase by more than 5°C - equivalent to the change in temperature between the last ice age and now.
- CO<sub>2</sub>E emissions must, ultimately, be reduced to 20% of current levels to stabilise emissions at 550 ppm or less and minimise the risk of temperatures rising too far beyond 2°C.
- Climate stabilisation can be achieved for a cost of 1% of GDP per year, if strong action is taken now
- Decisions made in the next 10 to 20 years will determine whether this enormous challenge can be met.

What is required?

- The Tyndall Centre concluded that UK CO<sub>2</sub> emissions need to be reduced by 70% by 2030 and by 90% by 2050. Progress towards significant, absolute reductions in CO<sub>2</sub> emissions is required in the next two to four years if the UK is to make its fair contribution to achieving a 450ppm CO<sub>2</sub> future.
- The North West Climate Change Action Plan produced in November 2006 set out a strategy to reduce emissions by 60% by 2050, with a ‘vision’ of becoming a “*a low carbon region that has adapted well to the impacts of climate change by 2020*”
- The Greater London plan sets a 450ppm stabilisation goal and targets a 4% annual reduction in CO<sub>2</sub> emissions, with an ultimate goal of a 60% reduction by 2025
- **Unlike national CO<sub>2</sub> emissions estimates that show a fall in emissions between 1990 and 2004 of 11%, emissions of CO<sub>2</sub> in the North West have increased by 13% - 6 million tonnes, mainly as a result of increased road traffic**
- Achieving compliance with the UK’s target of a 20% reduction on 1990 levels by 2010 will be extremely difficult, as the region would need to reduce annual CO<sub>2</sub> emissions by 15 million tonnes (29 %) in only 3 years

## **NWBLT views and activities**

- *“When it comes to the environment, we are – quite literally – all in it together”* (PWC)
- *“Ultimately, businesses should have a vision of zero emissions and zero waste”* (ABB).
- *“In five years time, any major company not addressing climate change will face major risks to their brand”* (Co-operative Group).
- *“If Companies don’t grip this now they will be marginalised. Customers are starting to require it”* (Speedy Hire).

## Management systems and actions

20 companies (77%) have set energy reduction targets.

15 companies (58%) have introduced or are exploring the ways that flexible working can save costs, reduce emissions and increase employee satisfaction.

## Achievements

- BT has reduced carbon dioxide emissions by 60% since 1996.
- 98% of the Co-operative Group’s electricity is purchased from renewable supplies.
- 94% of electricity purchased by KPMG is from renewable sources.
- More than 90% of energy is purchased from renewable sources at PwC. 2 Two departments have moved to electronic rather than paper files.
- United Utilities recycled 75% of their waste.
- In 2005 AstraZeneca adopted a strategic approach to internal communications, to reduce waste production and energy consumption, contributing to a saving of almost £1million against forecast energy budgets.
- Bruntwood have reduced annual CO<sub>2</sub> emissions from heating and cooling of buildings by over 73% (the equivalent of 12,300 tonnes).

## Engaging suppliers

- BT are pushing sustainability down the supply chain and do not make any concessions for small businesses.
- Siemens work with external verifiers to ensure suppliers meet their standards.

## Engaging with wider society.

- 17 companies (65%) are trying to inform their customers about sustainability.
- 16 companies (62%) are participating in collaborative research.
- 19 (73%) have worked with ‘expert’ organisations, such as the Carbon Trust.

## Investment – own products and services

- Siemens hold 30,000 patents for environmental and climate related solutions and invest approximately €2 billion per year in associated research and development.
- The Cheshire Building Society is in the first stage of designing the ‘perfect branch’ to be used as a template for any new branches and the refurbishment of existing sites. Energy efficiency will be a key criterion.

## Investment in buildings

- Lancaster University has a capital investment programme, with all new buildings on campus being constructed to BREAAAM ‘excellent’ standards.
- KPMG are constructing their new London Offices at Canary Warf to BREAAAM ‘excellent’ standards

### Investment in renewables

- The Co-operative Group has targets to generate 15% of their own electricity by 2015.
- Peel is investigating ways of harnessing tidal power in the Mersey Estuary and has invested in the Scoutmoor wind farm.

### **Workshop key themes**

Long term vision and leadership are important. Innovation and efficiency will both be needed. Raising awareness internally and externally will be key. Once firms have core elements of their energy use from electricity bills they can add community work, travel etc. Need to then link with waste, water and consumption and to have a carbon penalty. Changing the way we work is important

### **Conclusion**

The North West of England has a particular challenge in reversing the trend in emissions growth in recent years and the Climate Change Action Plan falls some way short of being 'leading edge', most notably when compared with London.

### What is needed?

- Leadership, including demonstrating commitment, identifying ways forward and encouraging others.
- Transparent systems to measure, manage and account for carbon
- Effective policy measures, including legislation and market mechanisms.
- Lobbying the Government on key issues, working between business and government to identify what should and can be done.
- Developing standards for sustainable procurement.

### Recommendations

- Setting up a 'junior' NWBLT, could provide both a valuable, fresh perspective for the Team and create learning opportunities for internal leadership programmes.
- As a 'critical friend' to the NWDA, the Team can challenge the direction of regional strategy.
- Press for the Liverpool 2008 Business Summit to focus on the challenges in achieving a sustainable global society.
- Develop a consensus position statement (possibly within a charter)
- Continue to support and promote the work of the North West Flexible Working Group.
- Exert influence at local, regional and national levels to promote sustainable transport initiatives.

This report therefore challenges the North West Business Leadership Team to use its collective influence to lead the way in creating a society that will thrive, both now and for the children of tomorrow.

## **1. Introduction**

### **1.1 Background**

The first decade of the 21<sup>st</sup> Century sees the relationship between Homo sapiens and the rest of planet Earth in an unprecedented situation (WWF, 2006). Globally, human population has more than doubled, from 2.5 billion people in 1950 to 6.7 billion today. The 2006 Living Planet Report calculated humanity's 'ecological footprint,' the area of biologically productive land and sea required to provide the resources people use and absorb the wastes they produce, measured in global hectares (gha) (WWF, 2006). The report concluded that as a species we are consuming 2.2 global hectares (gha) per person, which is 25% greater than the capacity of the planet, 1.8 gha (WWF, 2006). This phenomenon is called overshoot and humans have been in this state since the 1980s. With population set to continue rising and reach 9.2 billion by 2050 (United Nations (UN), 2006a) the gha available per capita will reduce still further. WWF therefore estimate that average global per capita demand will be twice the available supply by this date.

The component of the footprint that has grown most rapidly is carbon dioxide (CO<sub>2</sub>) emissions from fossil fuel burning, growing more than nine-fold since 1961 and now accounting for 48% of the total (WWF, 2006). The report clearly demonstrates that this increase has primarily occurred in the developed nations and that many of these countries are now in ecological debt. The United Kingdom (UK) has an ecological footprint of 5.6 gha per person, but only 1.6 gha of biocapacity within its own borders. This means that people in the UK are living beyond their means by a factor of 3.5. 64 other countries exceed the 1.8gha available per capita, 13 of which have a higher per capita footprint than the UK. 82 countries use less than the available biocapacity of 1.8gha per person, with 28 countries using less than 0.9gha per person (WWF, 2006).

WWF suggest economies in ecological debt can continue their consumption in overshoot by:

- Exploiting their own accumulated assets (such as forests and fisheries) faster than they can be renewed.
- Importing resources from other countries to meet the shortfall.
- Generating more waste, such as CO<sub>2</sub> emissions, than ecosystems within their own borders can absorb.

The evidence suggests that developed nations, such as the UK, have utilised fossil fuel energy to enable them to import many resources and improve productivity, with fossil fuels now underpinning every aspect of modern life (Leggett, 2005). It could be argued that combining cheap, imported resources with fossil fuel energy has enabled the already wealthy countries to achieve spectacular economic growth, while economic development in poor nations has been much more limited. Carvalho (2001) suggests that the current distribution of wealth among nations is tied to historical patterns of geo-political power, with structures and relationships established in colonial times continuing to influence global trade and politics today.

The use of fossil fuel energy has traditionally powered economic growth and can be seen as the main differentiator between the ecological footprint of rich and poor countries (WWF, 2006, United Nations Development Programme (UNDP), 2005). The differences between the wealth of nations are marked. UNDP (2005) point out that while one fifth of humanity thinks nothing of spending \$2.00 on a daily coffee, another fifth live on less than \$1.00 a day. In total, 2.8 billion people live on less than \$2.00 a day – 45% of the human population (New Economics Foundation (NEF), 2006). With the per capita daily income of citizens globally

\$27.89<sup>1</sup>, it can be seen that the ‘average’ daily income of \$97.78<sup>2</sup> enjoyed by UK citizens is well beyond that which most people in the world will ever achieve. Attempts to address social and economic imbalances will require significant inputs of resources. One of the most important is energy. However, the link between energy, fossil fuel burning and a high ecological footprint is clearly established and looks set to continue for the next 20 years at least (Pinnekamp, 2007).

*“For three decades now we have been in overshoot, drawing down these assets and increasing the amount of CO<sub>2</sub> in the air. We cannot remain in overshoot much longer without depleting the planet’s biological resources and interfering with its long-term ability to renew them”.*

(WWF, 2006, p. 15)

In reality, global overshoot can only be sustained for a limited period (Diamond, 2005). It would therefore seem that for countries with large ecological footprints and a disproportionate share of the world’s wealth, taking action to reduce their ecological footprint (consumption of resources and production of waste) as quickly as possible is both a prudent step to maintain their own wellbeing and crucial in enabling poor people to develop themselves out of poverty (Meadows et al, 1972, Meadows et al, 2004).

This is certainly the position espoused by the British Government (Department of Environment, Food and Rural Affairs (DEFRA), 2006, DEFRA, 2005), although UK citizens enjoy more than four times their 'per capita' allocation of global GDP and produce an ecological footprint two and a half times the ability of the planet’s capacity to absorb it. However, the UK only constitutes 1% of global population, with 60.36 million inhabitants (World Bank, 2006a). Therefore, while a big reduction in ecological footprint is required to bring the UK into line with the available absorption capacity, the overall contribution this would make to addressing global overshoot is marginal (Sustainable Development Commission (SDC), 2006). Nevertheless, the need for radical change in human behaviour at all levels is increasingly being acknowledged (DEFRA, 2006, DEFRA, 2005, Porritt, 2005, Tickell, 2007, World Council for Business and Sustainable Development (WBCSD), 2007).

The need for change is acutely highlighted by the increasing concern about human-induced climate change.

The Inter-Governmental Panel on Climate Change (IPCC) recently concluded that the climate system is ‘unequivocally’ warming (Alley et al, 2007), with a rise in temperature of 0.76° centigrade (C) occurring between 1850-1899 and 2001-2005 and a further increase of between 1.1° and 6.4°C by 2100 suggested as possible (2°C to 4.5°C seen as likely). Confidence is ‘very high’ (90%) that anthropogenic factors (primarily emissions of Greenhouse Gases (GHGs) from fossil fuel burning and land use changes) are contributing significantly to this warming by increasing the green house effect (Alley, et al, 2007, Meehl et al, 2007).

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<sup>1</sup> (based on GNI (PPP method) of \$10,180 divided by 365). (Source: World Bank, 2006b)

<sup>2</sup> (based on Gross National Income (GNI), per capita, (Purchasing Power Parity (PPP) method) of \$35,690 divided by 365). (Source: World Bank, 2006b)

Current understanding of the evidence suggests that:

- Carbon dioxide (CO<sub>2</sub>) emissions are higher now than for the last 650,000 years.
- Concentrations of CO<sub>2</sub> have risen from 285 parts per million (ppm) in the 18<sup>th</sup> Century to 381 ppm today and are continuing to grow at approximately 2ppm a year. The bulk of the increase has occurred in the last 50 years.
- Concentrations of methane and nitrous oxides have also increased dramatically over this period. These gases have a significantly higher radiative forcing than CO<sub>2</sub>.
- The oceans are warming and sea levels are rising by approximately 35mm per decade. This is accelerating.
- It is possible that other atmospheric pollutants may have limited the effects of warming, suggesting that as pollution decreases warming may increase (global dimming).
- The likelihood of temperature rising by more than 2°C is less than 50% if concentrations of CO<sub>2</sub> are stabilised at less than 450 ppm. If concentrations reach 550ppm the chance of a rise in excess of 3°C is greater than 50%.
- There is uncertainty regarding the influence of positive feedback loops and the possibility of abrupt climate change.

(Alley, et al, 2007, Meehl et al, 2007, King, 2007, Tickell, 2007)

In 2006, Sir Nicholas Stern conducted a review of the economic implications of climate change for the UK Treasury (Stern, 2006a, Stern, 2006b). In it he concluded that:

*“Climate change is a serious global threat and requires an urgent global response”*

(Stern 2006a, 21, p.1),

- Around the world, climate change will impact on the essential requirements for human and all other life: access to fresh water, the ability to procure food, risks to health through changing disease patterns and extreme weather such as heatwaves and flooding, and damage to the wider environment.
- If no action is taken to reduce greenhouse gas emissions (CO<sub>2</sub>E)<sup>3</sup>, concentration levels could exceed twice pre-industrial levels by 2035<sup>4</sup>, virtually ensuring a 2°C rise and creating a 50% possibility that temperature will increase by more than 5°C. This is equivalent to the change in temperature between the last ice age and now.
- A temperature increase of this magnitude would radically alter the physical geography of the planet and thus the landscape within which humans exist, dictating where human life can be supported and the most successful ways for people to live in their environment – human geography. Even a 2 to 3°C temperature rise could cause irreparable damage to the Amazon Rain Forest (Stern, 2006a) is likely to be enough to trigger melting of the Greenland Ice Sheet, with serious implications around the world (Hansen et al, 2007).
- It is no longer possible to prevent the climate changing over the next 20 to 30 years. The impacts can be reduced by improved planning, better information provision and the development of resilient crops and infrastructure. The costs are likely to be significant.
- The impacts will not be felt equally around the world, with the worst effects being seen in the poor nations, particularly because their climate is already hotter and they are often reliant on agriculture, the economic sector most sensitive to climate change.

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<sup>3</sup> CO<sub>2</sub>E refers to all greenhouse gases, giving values for other gases as equivalent to CO<sub>2</sub>. Hansen et al (2007) assigns a value of 1.4 to methane (CH<sub>4</sub>) and 1.15 to nitrous oxide (N<sub>2</sub>O)

<sup>4</sup> Pre industrial level = 280 parts per million (ppm) CO<sub>2</sub>E

- CO<sub>2</sub>E emissions must, ultimately, be reduced to 20% of current levels to stabilise emissions at 550 ppm or less and minimise the risk of temperatures rising too far beyond 2°C.
- CO<sub>2</sub> from burning fossil fuels is the most significant GhG produced.
- Stabilising concentrations at or below 550 ppm will require power generation to be 60% decarbonised by 2050. The transport sector will also need to make significant cuts in emissions.
- GDP per capita has traditionally gone hand in hand with CO<sub>2</sub> emissions per person. Since 1850, Europe and the United States of America (USA) have produced 70% of all CO<sub>2</sub> emissions resulting from energy production. Developing countries have used less than a quarter.
- The costs and risks of inaction are likely to be equivalent to losing around 5% of global GDP each year from now on, but could be 20% or more. Climate stabilisation can be achieved for a cost of 1% of GDP per year, if strong action is taken now, significantly reducing those risks.
- A co-ordinated global response is required. Rich nations need to both reduce their own emissions by between 60 and 80% and help poor nations to manage their development while building a sustainable infrastructure.
- A low carbon economy presents the only realistic opportunities for growth in the future. To facilitate this carbon must be priced and paid for through tax, regulation or trading, policies must encourage innovative development and deployment of low carbon technologies and barriers to efficiency, including educating people about what needs to be done, must be a priority.
- Decisions made in the next 10 to 20 years will determine whether this enormous challenge can be met.

Climate change therefore highlights the urgent need to address the aspect of overshoot resulting from fossil fuel burning (Matthews, 2007). It could be argued that action should be led by developed nations, who have significantly greater than average wealth and create much more than their fair share of the problem, with future economic benefits accruing mainly to the poor. However, neither history nor current global trade rules suggest that countries that have accrued wealth are prepared to share it with their poor neighbours (Carvalho, 2001, Oxfam, 2002). For example, only 0.3% of the Gross National Income of 'donor' countries is directed into aid for developing countries, compared to the Millennium Development Goal (MDG) of 0.7% (United Nations, 2006b).

Nevertheless, it is apparent that global society has managed to address overshoot before, in response to the hole in the ozone layer that resulted from the use of chlorofluorocarbons (CFCs), although it did take 25 years and the effects will be felt for many years to come (Meadows et al, 2004). While it is heartening to see success in reversing overshoot, it must be remembered that whereas CFCs played a number of crucial functions (particularly in refrigeration and aerosol propulsion), fossil fuel energy underpins every aspect of modern life in the developed world (Leggett, 2005). Ultimately, therefore, a fundamental change in the way energy is produced and used is required in order to reverse the progress of overshoot related climate change (Zhang, 2004). As a result, climate change is both a social and economic issue and a concerted effort is required from individuals, private and public sector organisations and governments to address it (DEFRA, 2006).

The challenge of climate change is set within a time of 'economic revolution' (Davidson and Rees-Mogg, 1997), driven by rapid technological developments and increasing globalisation, changing our individual working patterns, the structure and function of both public service

and private enterprise organisations and the relative economic power of nations (Guptara, 2005, Hawksworth, 2006). Hawksworth (2006) suggests that by 2050, the GDP of the 'E7' economies (China, India, Brazil, Russia, Indonesia, Mexico and Turkey) economies will be around 25% larger than the current G7 (US, Japan, Germany, UK, France, Italy and Canada), when measured in dollar terms at market exchange rates (MER), or around 75% larger in purchasing power parity (PPP) terms. This contrasts with today, with the E7 currently only around 20% of the size of the G7 at market exchange rates and around 75% of its size in PPP terms.

In addition, it should also be noted that there is increasing concern that fossil fuels, particularly oil, may be unable to meet demand in the not too distant future. Cavallo (2004) suggests that a global peak in conventional oil production is likely to occur before 2025 as a result of resource constraints alone, although the peak may occur much sooner due to transportation limitations and producer determined restrictions on output. Other commentators are not so optimistic and argue that global supplies have already peaked (Leggett, 2005).

It would therefore seem that a new way of providing for the needs of society is urgently needed (Porritt, 2005). This will require a concerted effort, from individuals, organisations (private and public) and communities, co-ordinated by regional, national and global governance and co-operation systems (World Business Council for Sustainable Development (WBCSD) (2007), Department of Environment Food and Rural Affairs (DEFRA), 2005, DEFRA, 2006). The UN Human Development Report due for publication in November 2007 will stress the urgency of the task, arguing that there at most 10 years to reverse the trend and start living within our global carbon budget (UN, 2007).

However, as Cavallo (2004) comments:

*“It is clear that the concept of limits to growth is difficult for most people to accept. Many decades of increased economic activity and spectacular progress in all areas of science and technology have created the impression that such a state of affairs is a permanent component of Western civilization. Yet limitations are a fundamental part of the natural order, and sooner or later we must face up to this. In particular, fossil fuel resources, an essential input into any modern economic system, are finite”.*

(P. 212)

## **1.2 The UK's response to the climate change agenda.**

In order to minimise the likelihood of 'dangerous' climate change, the UK Government has set an aspirational target to reduce CO<sub>2</sub> emissions by 60% by 2050, as a measure to stabilise CO<sub>2</sub> emissions at less than 550 parts per million (ppm) and keep the temperature increase below 2°C (Bows et al, 2006). This target is proposed within the draft Climate Change Bill, with reductions of 26 to 32% to be achieved by 2020 (DEFRA, 2007).

However, Bows et al (2006) suggest that the targets being worked towards in the UK are based on outdated science, and, that to minimise the risk of temperatures rising above 2°C atmospheric concentrations of CO<sub>2</sub> emissions must stay below 450 ppm. In addition, Bows et al (2006) suggest that what is important is not the annual amount of CO<sub>2</sub> emissions produced, but rather the total amount emitted between now and 2050. Adopting the contraction and convergence model (where the total emissions that the atmosphere can cope with are calculated, allowances allocated per capita on a global basis and reductions in emissions made with a view to converging at a common point in the future) Bows et al (2006) propose that the UK can emit a total of 4.6 billion tonnes (gigatonnes, (Gt)) of CO<sub>2</sub> to achieve a 450ppm

target, compared with 6.3 Gt under a 550ppm regime. Contrast this to the level of CO<sub>2</sub> emissions produced in 2005 of 527 million tonnes (megatonnes (Mt)) and it is apparent that by continuing to emit CO<sub>2</sub> at current levels the total carbon budget for the UK up to 2050 will be exceeded much sooner. Indeed, Bows et al (2006) suggest that significant reductions are unlikely to be achieved before 2010, resulting in the UK using 1.85Gt of its allowance in the next 3 years and leaving just 2.8Gt of CO<sub>2</sub> in the budget to last until 2050.

However, this picture does not tell the whole story, as CO<sub>2</sub> emissions from international aviation and shipping are excluded in the UK's greenhouse gas inventory. Taking into account these additional sectors leads Bows et al (2006) to conclude that UK CO<sub>2</sub> emissions need to be reduced by 70% by 2030 and by 90% by 2050. Progress towards significant, absolute reductions in CO<sub>2</sub> emissions is required in the next 2 to 4 years if the UK is to make its fair contribution to achieving a 450ppm CO<sub>2</sub> future.

### **1.3 The regional perspective**

The North West Regional Assembly (NWRA) recently completed a regional greenhouse gas inventory, in which emissions of CO<sub>2</sub> were estimated at 52 million tonnes in 2004 (Peace and McCubbin, 2007) – approximately 10% of the UK total. However, unlike national CO<sub>2</sub> emissions estimates that show a fall in emissions between 1990 and 2004 of 11%, emissions of CO<sub>2</sub> in the North West have increased by 13% - 6 million tonnes, mainly as a result of increased road traffic (Peace and McCubbin, 2007).

The North West Climate Change Action Plan produced in November 2006 set out a strategy to reduce emissions by 60% by 2050, with a 'vision' of becoming a "*a low carbon region that has adapted well to the impacts of climate change by 2020*", and a 'mission' to be the leading region on climate change (North West Regional Development Agency (NWDA), 2006, p. 1). However, considering the evidence presented in section 1.2, it would appear that the regional targets, as with the broader UK targets, are inadequate. In addition, when compared to the climate change action plan for Greater London, it can be seen that the North West is quite far from leading the way in its approach, as the London plan sets a 450ppm stabilisation goal and targets a 4% annual reduction in CO<sub>2</sub> emissions, with an ultimate goal of a 60% reduction by 2025 (Greater London Authority (GLA), 2007). Whether this proves to be achievable remains to be seen. However, the aspirations of London appear significantly more ambitious than those of the North West.

Regardless of the targets set for the North West, the NWRA greenhouse gas inventory illustrates that achieving compliance with the UK's target of a 20% reduction on 1990 levels by 2010 will be extremely difficult, as the region would need to reduce annual CO<sub>2</sub> emissions by 15 million tonnes (29 %) in only 3 years, and by 20 tonnes (38%) by 2020 (Peace and McCubbin, 2007). Nevertheless, considering the region's CO<sub>2</sub> emissions in the context of the UK's cumulative carbon budget discussed in section 1.2 suggests that the North West of England has a total budget of 460Mt of CO<sub>2</sub> between now and 2050.

#### 1.4 What will this mean for business?

Figure 1 shows how all these factors are likely to impact on businesses.

**Figure 1. The Natural Step - ‘funnel’ of external factors that will impact on business.**



(Forum for the future, ND, p.2)

These pressures are already evident in growing concern from civil society and governments, with increased expectations that businesses address the impacts of their operations on society and the environment (Porter and Kramer, 2006).

To address climate change, the World Business Council for Sustainable Development (WBCSD, 2007) suggest that the challenge for business is to reduce energy consumption per \$ of GDP by 45% and halve the carbon intensity of energy production (WBCSD, 2007).

While climate change is generally viewed as a threat, it is also clear that there will be opportunities for those businesses that can align their operations with meeting the challenge as new technologies and business models will be required (Porritt, 2006).

The business perspective on climate change and environmental sustainability will be explored more fully in section 2.

## **2. Review of corporate literature**

### **2.1 The world in the 21<sup>st</sup> Century**

*“Exponential population growth, falling mortality and fertility rates, a shift in the demographic balance between young and old, chronic poverty in much of the southern hemisphere, urbanization and the growth of megacities, mass migration within and between countries, the rising influence of religion in some cultures and growing secularism in others, and the worldwide impact of the digital and IT revolutions – these are all factors that are driving societies and individuals towards increasingly rapid change”.*

(Pinnekamp, 2007 (ABB Review))

The world is changing rapidly. Global population is forecast to grow by 2 billion people by 2020 (from 6.7 billion today), with people living longer and wanting better lives, increasing demand for power by 70% in the next 12 years, and for fresh water by 40% by 2025 (Siemens, 2006). The power of emerging markets, especially India and China, is redrawing the global economic map. 2007 sees the majority of humanity living in cities for the first time, in our history. However, human development is already stressing the natural environment to an unprecedented level (BT, 2007).

*“When it comes to the environment, we are – quite literally – all in it together”.*

(PwC, 2007a)

### **2.2 Human induced climate change**

A key concern is human induced climate change. The scientific consensus is that the climate is changing as a result of greenhouse gases from human activities accumulating in the atmosphere, most significantly burning fossil fuels for energy. If not addressed, increasing emissions could undermine the natural, social and economic systems that a growing global economy requires and threaten the quality of life of all people (Bank of America, 2007).

*“No one can fail to have heard of the ever increasing expressions of concern over the effect human activity is having on our climate. It is becoming clear that the challenge we all face is of a kind and magnitude unlike anything we have had to face before”.*

Allen Norris, Pilkington (in British Glass, 2006)

Since Al Gore’s film ‘An Inconvenient Truth’ and the Stern Review, and with increasing media coverage of the science and potential ramifications of climate change, there is a growing societal awareness that *“environmental responsibility is critical to all our futures”* (PwC, 2007a, p. 10, PwC 2007b). To successfully address climate change and other consequences of humanity’s heavy environmental footprint, every individual will need to be involved in the prudent management of the Earth’s resources (Unilever, 2006). Global leaders in business and government are now engaging with the issues (PwC, 2007b).

*Issues such as climate change bring the need to manage resources effectively and reduce environmental impact into sharp focus.*

(Unilever, 2006, p. 1)

## 2.3 Sustainable Development

As a result, there is a clear commitment to pursuing a strategy of sustainable development from companies within the NWBLT. United Utilities (2006, p. 1) define sustainable development as

*“...development that conserves natural resources, protects and enhances the environment, supports the communities we serve, and maintains economic growth”.*

Unilever CEO, Patrick Cescau (2007), argues that environmental sustainability and social responsibility are no longer ‘fringe’ activities but are now essential business competencies. Cescau suggests that the success and failure of individual businesses in the next few decades will depend on how quickly and effectively they can respond:

*“As globalisation accelerates, and as the limits of the planet’s resources are reached, large companies and brands will increasingly be held to account on the sustainability of their business practices. The companies that succeed will be those that reduce their environmental impacts and increase the sustainability of their supply chains **now**, rather than wait until either legislation or public outcry forces them to do so”.*

(p. 2)

The message would therefore appear clear; the task is to reduce resource consumption and waste production. ABB (2005, p. 9) suggest that

*“Ultimately, businesses should have a vision of zero emissions and zero waste”.*

## 2.4 The importance of energy

Key within this is energy, as primary energy use (of oil, gas, coal, and uranium) has traditionally been strongly correlated with Gross Domestic Product (GDP). While this correlation is expected to decrease to a degree in the future, global economic growth will continue to be associated with increased energy consumption (Pinnekamp, 2007).

*“The top priority for all countries will be to ensure a reliable supply of electric power with the cost of refurbishing existing grids or building new ones being a major challenge”.*

(Pinnekamp, 2007, p. 10)

Fossil fuels will be available until beyond 2020 and are likely to remain the primary sources of energy. The International Energy Association (IEA) estimate that over the next 30 years \$16 trillion will be needed to meet demand, with 60% of the investment in power plants and transmission/distribution networks. Oil is likely to remain the dominant fuel with a 38% share, although more than 30% of the necessary resources remain undiscovered (Pinnekamp, 2007). Gas will play an important role in power production (30%) due to lower emissions of greenhouse gases. However, coal use is expected to increase everywhere apart from Western Europe, particularly in China and India. Nuclear energy may gain in popularity. While primary energy resources such as wind, solar, geothermal and wave will become part of the mix, the technologies are unlikely to make a significant contribution to global energy production in the next 20 years. Much of the technology required to fill the potential energy gap is still in development and it will be some time to economic viability (Pinnekamp, 2007).

In the UK electricity consumption has increased annually since 2000. To meet the Kyoto Protocol targets, the emissions of developed nations need to be reduced by 29% by 2010 (Siemens, 2006).

As a result:

*“There is now a widespread, international consensus that the world cannot continue to rely on fossil fuels for its energy needs in the future. Climate change and increasingly scarce resources mean that we need to look for new sources of power, and to reduce demand”.*

(United Utilities, 2007, online: <http://www.unitedutilities.com/?OBH=1930>).

Energy efficiency is therefore the name of the game. It makes both economic sense, in light of recent sharp rises in fuel costs, and environmental sense, as using less energy requires less fuel, leading to fewer emissions and reducing impact (Pilkington). However, efficiency is unlikely to be enough. The evidence suggests that the next 50 to 100 years will see a ‘switching’ of the energy system as the supply of fossil fuels is exhausted. What shape the new system will take remains uncertain (ABB, 2006).

## **2.4 What needs to be done?**

In the meantime a number of actions that can be taken now to reduce greenhouse gas emissions are suggested:

***Savings come first:*** *energy conservation measures and demand-side management should be stimulated.*

***Reshape energy systems:*** *enhance the contribution of renewable sources and CO2 free power generation.*

***Getting the incentives right:*** *regulatory frameworks, subsidies, taxes, trading schemes and carbon quotas should work together to limit emissions.*

***Raise awareness and educate*** *the general public to change consumer patterns.*

***Promote*** *existing cutting-edge energy efficient technologies.*

***Strengthen support for research and development*** *on energy issues and launch technology development and deployment schemes in the market-place to speed-up technology change. Innovate and develop products and systems that meet the demands of the carbon constrained world.*

(ABB, 2006)

### **3. Evidence gathered from the research**

#### **3.1 North West Business Leadership Team views on climate change and sustainability**

The issue of climate change and more broadly of sustainability are considerations within all the companies represented on the NWBLT, with 21 companies (81%) actively contributing to the debate on how to achieve a sustainable future. The global nature of climate change was highlighted by just over half of participants (14). A third of companies (9) stressed the importance of having a balanced view, arguing that climate change is about more than 'just carbon' and that social and economic factors should also be considered. The importance of adopting a long-term perspective was stressed by 11 respondents (42%). Issues raised by individual members include:

- The consideration of the net 'carbon cost' of products over their entire lifecycle (Stuart Chambers, Pilkington).
- Whether we should be investing carbon now to save carbon in the longer term (Stuart Chambers, Pilkington)
- How impacts can be reduced and not just exported (Stuart Chambers, Pilkington)
- The ability of the UK and the North West to participate effectively in the globalised economy (Geoff Muirhead, Manchester Airport Group)
- Emissions will only increase if a company is successful, it is therefore important to manage the emissions of growing sectors in balance. Just saying 'no more emissions' will lead to damage in social and economic terms (Geoff Muirhead, Manchester Airport Group).
- The goals of reducing emissions and economic growth are not incompatible (Geoff Muirhead, Manchester Airport Group).
- Climate change is about mitigation and adaptation. Both aspects must be addressed. (Clive Elphick, United Utilities).
- The impact of climate change policies on suppliers in developing nations (Workshop, discussion group 3).

#### **3.2 There are significant commercial reasons for taking action**

Commercial drivers were most frequently cited as reasons for taking action (21 companies, 81%). These include:

- Cost savings (18 companies, 69%)
- Longer term sustainability (15 companies, 58%)
- The ability to demonstrate responsible corporate behaviour (22 companies, 85%)
- Enhancing brand value (11 companies, 42%), of which 6 (23%), highlight the benefits related to the recruitment and retention of staff and 8 (31%) illustrate how taking action can lead to competitive advantage.
- Customer demand (7 companies, 27%)

*"Clients are starting to ask what you do at tender level. Being able to speak from experience can be a door opener and help engage senior executives. Sustainability is an issue that companies are struggling with, much as diversity was ten years ago."*

(Malcolm Edge, KPMG)

Conversely, not taking action will create risks.

*“In five years time, any major company not addressing climate change will face major risks to their brand”.*

(Co-operative Group)

*“If Companies don’t grip this now they will be marginalised. Customers are starting to require it”.*

( Mike McGrath, Speedy Hire).

In addition to commercial risks and benefits, a number of respondents highlighted other reasons for taking action:

- 11 companies (42%) felt that it was important to take action so that they are operating with integrity.
- 4 respondents (15%) were concerned about legacy for future generations.

### **3.3 Responses to the sustainability agenda**

There was a strong indication that sustainability is emerging as an important business issue, with individual organisations adopting their own approach to identifying environmental impacts and reducing them. Climate change is addressed primarily within the Corporate Social Responsibility (CSR) activities of member companies, which also address other environmental impacts and the social aspects of sustainability. This study clearly suggests that climate change should not be considered in isolation, but rather that it should be part of a broader perspective that encompasses all the environmental, social and economic aspects that organisations need to address. Although approaches vary, it is clear that there are significant elements of overlap in areas to which action is directed.

The activities undertaken by NWBLT companies are presented under the following headings:

- Managing environmental impacts
- Engaging with others
- Investment

## **3.4 Managing environmental impacts**

### 3.4.1 Management systems

25 member companies (96%) have a publicly available environmental policy and 26 (100%) have a clearly identified internal co-ordination process. 13 companies (50%) have ISO14001 accredited environmental management systems in place and 5 companies (19%) are working towards accreditation. 20 companies (77%) publicly report on their environmental performance, with 18 (69%) participating in programmes such as the Global Reporting Initiative, Global Compact, Carbon Disclosure Project and BiTC indices.

### 3.4.2 Management actions and priorities

22 companies (85%) have measured their energy consumption and 20 companies (77%) have set energy reduction targets. 21 companies (81%) are working to improve energy efficiency and more than two thirds (18 companies) have implemented specific energy saving initiatives. 20 companies (77%) have waste reduction targets and 24 companies (92%) are working to reduce waste produced and increase the amount of recycling. 23 companies (88%) have systems in place to monitor progress.

For 21 companies (81%) travel and transport are key issues and action is being taken in these areas. Increased use of technology such as video conferencing has enabled 15 companies (58%) to reduce business travel, while 15 companies (58%) have introduced or are exploring the ways that flexible working can both save costs, reduce emissions and increase employee satisfaction. 18 companies (69%) are developing their internal processes and 13 companies (50%) have general operational plans to improve environmental performance. 50% of companies (13) buy a proportion of their electricity from renewable resources.

### 3.4.3 Achievements

- ABB have switched their entire fleet to diesel, significantly reducing fuel consumption.
- AstraZeneca have saved almost £1million through an energy and waste reduction programme.
- BT has reduced carbon dioxide emissions by 60% since 1996. They are the largest purchaser of renewable energy in the UK. BT's flexible working programme has had significant benefits for the company, including saving money, reducing travel and improving employee morale/retention.
- The Co-operative Group has developed the UK's largest private renewable energy development, with future developments including the cladding of the CIS tower in photovoltaic cells. 98% of the Group's electricity is purchased from renewable supplies.
- 94% of electricity purchased by KPMG is from renewable sources.
- Addleshaw Goddard have the lowest emissions per fee earner out of the top 20 UK law firms, as reviewed by the Lawyer Magazine
- Unilever have reduced the amount of energy used in their factories by 30% over the last 10 years and have targets to reduce the environmental impact of their products over the next few years. An example of this is 'Small and Mighty', a concentrated washing detergent.
- 60% of waste is recycled at PwC, up from 30% in 2002/3. More than 90% of energy is purchased from renewable sources. PwC have also moved 2 departments to electronic rather than paper files. Most client correspondence is now via email. The tax office is now completely paperless and the audit department is moving towards being paperless. In the Manchester office there were 7 filing ranges, with between 5,000 and 7,000 in each one. 5.5 of these have gone to archiving and not been replaced – removing 30-35 thousand files.

- United Utilities recycled 75% of their waste and generated 79 GWh of renewable energy from waste-water treatment plants in 2006/7.
- Speedy Hire have reduced vehicle emissions by 15% in the last 5 years.
- Virgin Trains have introduced generative braking, which puts approximately 17% of electricity used back into the grid when braking.
- Bruntwood are in the second year of a five year programme to decrease energy consumption by 10% pa by 2010, from a 2005/06 baseline, and achieved the targeted 10% reduction in year 1.
- Pilkington have made significant improvements in energy efficiency and are approaching optimum efficiency. CO<sub>2</sub> emissions from glass manufacture fell by 1.4% in 2006.

*“We used to have a jobs bulletin that used 250 tonnes of paper per year. Now we have an e-database. All our internal communication is online.*

(Ian Wood, BT)

### **3.5 Engaging others**

There is evidence of a clear commitment to sustainability, with all NWBLT members articulating top level management support. There is also evidence that strategies are in place to engage employees, customers, suppliers and the wider community in improving sustainability performance. Activities are presented below.

#### 3.5.1 Employees

In some instances there is a “*groundswell of enthusiasm*” from employees (Nevil Hilton, AstraZeneca, Steve Kelly, Hill Dickinson). 22 Companies (85%) have initiatives to engage employees, including awareness campaigns (14 companies, 54%) and identifying employee champions (10 companies, 38%) and 12 companies (46%) provide training. A number of initiatives are outlined below:

- In 2005 AstraZeneca adopted a strategic approach to internal communications in order to reduce waste production and energy consumption. Under the strapline of “*thinking about tomorrow today*” AstraZeneca implemented a comprehensive communication programme, co-ordinated by a small waste and energy communications team. Initiatives included an electronic news-letter, utilising the intranet and holding drop-in sessions on energy and waste. The message was also conveyed using posters and plasma screens throughout the Cheshire facilities. The programme helped AstraZeneca to save almost £1million against forecast energy budgets, reduce waste production by 11% and cut carbon dioxide emissions (7,200 tonnes less than forecast and 3,000 tonnes less than actual emissions in 2004) in their Cheshire sites, and won the 2006 North West Business Environment Award for best environmental practice in a large company.
- At KPMG, employees are encouraged to put forward suggestions for environmental improvements and prizes are awarded for the best ideas. As part of a commitment to reduce paper use, KPMG donates half of the money saved to their charity of the year.
- PricewaterhouseCoopers celebrated World Environment Day 2007 with a series of events, including office screenings of “*An Inconvenient Truth*”, encouraging staff to make personal environmental pledges and running the PwC polar walking challenge. This consisted of walking the distance from Canada to the North Pole in teams (770km), with the option to swim a final section, to acknowledge the reality of reduced ice cover at the pole.

- Revitalising CSR activities, Addleshaw Goddard have conducted a number of focus groups to enable them to understand employees' views and actively encouraging participation in improving environmental performance. Environmental Champions are now in place in all offices and a website dedicated to communicating and involving people in their CSR efforts has been launched. 56% of all waste was recycled in July 2007.
- BAE Systems consider internal communication and employee involvement as one of three pillars to achieve environmental improvements, alongside engineering changes and capital investment. Cultural awareness campaigns are run by the Health and Safety department and there are energy pages on the intranet. An online car sharing database and campaigns such as cycle to work week encourage individuals to change their own behaviours.
- PwC have introduced a 'green fleet' initiative, providing information on fuel usage and environmental performance for staff choosing a company car. PwC also provide loans for bicycles and staff can claim business miles for bike use.
- MBNA have set up a car-sharing scheme and incentivise staff to use it, for example by providing spaces for sharers close to the buildings.

*“We had a presentation from the Senior Vice President for Global Corporate Responsibility delivering a lecture on climate change and what the company is doing. People found it hugely motivating”.*

(Caroline Cooper, Unilever)

### 3.5.2 The supply chain

19 companies (73%) are considering environmental criteria when making purchasing decisions and have committed to working with supply chains to improve sustainability performance.

- Hill Dickinson has a process to evaluate suppliers.
- BT are pushing sustainability down the supply chain and do not make any concessions for small businesses.
- Unilever work with small suppliers to help them improve their sustainability practices
- KPMG encourage improvements and hold meetings with small and medium enterprises (SMES).
- AstraZeneca held a workshop for local SMEs and received extremely positive feedback.
- Siemens work with external verifiers to ensure suppliers meet their standards.
- The Co-operative Group has set environmental criteria for suppliers, although not directly relating to carbon dioxide emissions.
- Speedy Hire are driving sustainability through their supply chain, requiring suppliers to demonstrate their practices are in line with Speedy Hire's corporate responsibility standards.

### 3.5.3 Wider society

Educating and informing society is a priority in a number of organisations, with 17 companies (65%) trying to inform their customers about sustainability.

- Through their Environmental Education Centre in Leigh, United Utilities provide a range of educational resources for school children. In a dedicated section of the United Utilities website entitled ‘sustainable energy for teachers’ there are a number of downloadable activities for use in the classroom covering areas such as climate change, energy efficiency and renewable energy. Students can attend the education centre for a day of activities that complement the national curriculum. United Utilities have a number of Environmental Education Centres and online resources providing free, interactive learning experiences on the topics of water and electricity.
- With a dedicated climate change website, BT provides educational content on climate change and what people can do to reduce their own contribution. With an ‘interactive house’ containing lots of ideas for practical action at home and a section for small businesses on steps they can take, the site provides a useful educational resource that anybody can access.

*“We encourage people to use our website to calculate their own carbon footprint”*

(Mike Blackburn, BT)

### 3.5.4 Collaboration

Across NWBLT member companies there is significant evidence of collaboration with trade associations, ‘expert’ organisations and academia on environmental issues. These activities include:

- Pilkington’s Environment Director is the President of British Glass, the industry trade association.
- Manchester and Liverpool Airports are part of the Sustainable Aviation Group.
- 19 Companies (73%) have worked with outside experts such as the Carbon Trust.
- The Co-operative Group hosted the North West regional hub at the inaugural BitC Mayday Summit on Climate Change (1<sup>st</sup> May 2007).
- BT provided the technology to support the Mayday Summit throughout the UK and also the North West Regional Assembly’s annual conference. BT’s Chief Executive is chairing the CBI taskforce on Climate Change.
- Littlewoods chair the UK steering group of the United Nations Global Compact Network.
- Innovia Films participate in ‘Cumbria Futures,’ a think-tank set up to develop a long-term vision of a sustainable future for the county.

## **3.6 Investment**

Investment in sustainable development takes a number of forms among NWBLT companies. 81% of Companies (21) are investing in their own products and services to address the climate change agenda, with 16 (62%) conducting collaborative research. 54% (14) are investing in renewable energy technologies and just over one third (9 companies) are using combined heat and power (CHP) plant. 13 companies (50%) are investing in new buildings and are committed to achieving high environmental standards. Offsetting is undertaken by 9 companies (35%), while 7 companies (27%) are exploring the use of biofuels. Highlights are presented below.

### 3.6.1 Investment in own products and services

- United Utilities recently launched a £37 million investment plan to reduce CO2 emissions by 8% compared to 2005/6 emissions by 2012, reversing a rising trend across the industry. To drive delivery of this plan, it is the first in its sector to appoint a dedicated carbon manager.
- Siemens hold 30,000 patents for environmental and climate related solutions and invest approximately €2 billion per year in associated research and development.
- Innovia Films have developed a type of film made from wood pulp that is home compostable and selling in significant volumes to UK supermarkets.
- Pilkington are working with Manchester Metropolitan University on coatings to improve the energy performance of their glass.
- KPMG and PWC are developing the advisory services within their businesses to help their clients address sustainability issues.
- Littlewoods are introducing biodegradable bags and will have organic cotton clothing available in their summer 2008 collection.
- Bruntwood have installed an aM&T system (Smart Meter technology) to the primary gas and electricity meters across all of their portfolio. They are now rolling out phase 2 of this initiative to install Smart Meters to all customer occupied office suites. To date this process is complete to around 2 million sq ft of their office portfolio.
- Speedy Hire have invested in electric vehicles.
- The Cheshire Building Society are in the first stage of designing the ‘perfect branch’ to be used as a template for any new branches and the refurbishment of existing sites. Energy efficiency will be a key criterion.
- ABB are looking at remote equipment testing, using web cameras on site. Engineers can log in and test equipment from their own offices. This is saving lots of time (typically 2 days of travelling per test) and reducing the environmental impact of business travel.

### 3.6.2 Investment in research

- Pilkington run the Pilkington Energy Efficiency Trust (PEET), funding projects researching energy efficiency in buildings.
- Bruntwood are looking at funding a Chair in sustainable urban design studying best to design cities for the future, with a view to enabling Manchester to become an international centre of excellence.
- ABB work with a number of universities worldwide and employ a dedicated research and development team who explore sustainability issues and share their research on their website.
- Co-operative Financial Services works with other organisations to support research activities. In 2006 The Co-operative Bank and Friends of the Earth commissioned research by the Tyndall Centre to explore a low carbon future (Bows et al, 2006). The report is entitled “*living within a carbon budget*”.
- BNFL work with the Dalton Nuclear Institute to promote understanding of how nuclear energy can form part of a sustainable energy mix.
- Manchester Airport works with CATE (Centre for Air Transport and the Environment) at Manchester Metropolitan University to develop sustainable solutions for the aviation industry.
- The University of Liverpool has formed the SWIMMER Institute (Sustainable Water, Integrated Management and Ecosystem Research) which is applying an interdisciplinary approach to many of the issues associated with climate change and the sustainable management of the most essential resource for life – water. In partnership with the Centre for Sustainable Water Management (CSWM) at Lancaster University and the NERC (Natural Environmental Research Council) centres, the Proudman Oceanographic

Laboratory (POL) and the Centre for Ecology and Hydrology (CEH) have formed a virtual centre for analysing water relationships from 'The Uplands to the Sea'. This alliance in turn is an essential component of the N8 Sustainable Water Theme involving the eight research intensive Universities of the North.

- Lancaster Universities recently opened the £8.4 million, third phase of the Lancaster Environment Centre (LEC), with diverse and thriving research programmes in areas such as environmental science and understanding the interplay between humans and the planet. The enterprise and business partnerships teams are working with a range of commercial organisations and the LEC plans to house up to 45 associated small businesses within 5 years. The team also have plans to develop 300 collaborative partnerships, work with 100 organisations to improve their environmental performance, provide 130 learning opportunities for students and start up 7 new businesses over the same period. It is hoped that the centre will contribute to local economic regeneration, safeguarding 140 jobs and creating 30 new employment opportunities.
- United Utilities recently completed a research project with Liverpool John Moores University, looking at water efficient showers.
- Innovia Films worked with Newcastle University on waste and recycling issues.

### 3.6.3 Investment in buildings

Almost half of NWBLT companies have invested in improving the sustainability of their buildings. Highlights include:

- Bruntwood are improving the energy efficiency of all buildings within their portfolio, by ensuring that in the construction of new development projects and improvements to existing investments they incorporate environmental considerations in the design process to reduce the production of greenhouse gas emissions and promote the efficient use of resources.
- BAE Systems are constructing all new buildings to comply with BRE AAM (Building Research Establishment Environmental Assessment Method (UK)) 'very good' standards.
- Lancaster University has a capital investment programme, with all new buildings on campus being constructed to BRE AAM 'excellent' standards.
- Siemens have installed filters on the windows in their Manchester site to reduce glare and improve energy efficiency even though they are tenants in their building.
- The Co-operative Group has made improved energy efficiency a key performance indicator for store refurbishments.
- KPMG are constructing their new London Offices at Canary Wharf to BRE AAM 'excellent' standards and leading the way for sustainable building design on the Canary Wharf Development.
- Grosvenor are building the Liverpool Paradise Project to BRE AAM 'very good' standards. The development includes a significant investment in flood defence.
- Hill Dickinson have designed their new offices in Liverpool with energy efficiency and sustainability in mind.
- The University of Liverpool are revamping their CHP plant. It will supply all heat and power for the University.

### 3.6.4 Investment in renewable energy

- The Co-operative Group have partnered with Scottish Power to develop their own renewable energy supply on company owned farm land and have targets to generate 15% of their own electricity by 2015.
- United Utilities provide energy from combined heat and power utilising methane gas and are working on an innovative project to utilise sludge to generate energy and produce an end product suitable for use in agriculture.
- Liverpool University are building solar panels into new buildings.
- Liverpool Airport has plans to install wind turbines on the approach to the site.
- BAE systems are looking at building wind turbines on their Salmesbury site.
- Manchester Airport have utilised technologies such as ground-source heat pumps and are investigating the possibilities for further investments in renewable energy.
- Virgin Trains are investing in biofuels for their diesel powered trains.
- Peel Holdings are investigating the possibility of developing tidal power in the Mersey Estuary.
- Innovia Films are investigating the possibility of developing an energy from waste facility as part of their CHP plant.
- Bruntwood have been working to shift the balance of their energy portfolio from what was essentially a “brown” (coal based) portfolio, to one which today comprises of “mid green” (combined heat and power) and “green” (fully renewable) technologies. During this period the renewable energy profile in terms of green technologies has increased from the November, 2004 baseline figure of just 14% to the September, 2006 figure of 99%. As a result of the increased use of renewable energy compared with a 2004 baseline, annual CO<sub>2</sub> emissions associated with the provision of heating and cooling of their buildings, have over the last two yrs decreased by over 73% or the equivalent of 12,300 tonnes.

### **3.7 Summary of the workshop discussion groups**

As part of this project a workshop was conducted with NWBLT Companies and other relevant regional partners to discuss what is required to meet the climate change challenge. A summary of the workshop discussions is presented below.

#### 3.7.1 Making big reductions in emissions (Facilitator, Callum Thomas, MMU)

*Participants: Mark Atherton – NWDA, Chris Matthews – United Utilities, Derek Norman – Environment Agency, Dorothy Seed – BNFL, Richard Quenby – Addleshaw Goddard, Caroline Sudworth - MMU*

Need to reduce emissions as much as possible as soon as possible, but no business wants to go too far and trip over. Environmental ‘good sense’ should inform decision making. Need to look at all areas; the task of doing it is daunting. Long term vision and leadership are important. Innovation and efficiency both needed. There is confusion and clear information is required. Energy efficiency into the supply chain to achieve improvements throughout the whole supply chain is vital. Raising awareness internally and externally will be key.

#### 3.7.2 Achieving change (Facilitator, Paul Tanner, Lancaster University)

*Participants, Caroline Cooper – Unilever, Gaynor Emuss – KPMG, Nevil Hilton – AstraZeneca, Chris Hughes – Proudman, Steve Kelly – Hill Dickinson, Paul Needham – Environment Agency, Sue Webster – BT*

Problems of trust by the consumer and motives. Brand loyalty – people change quickly, price is what people choose products on. Regulatory drivers are important to make people get environmentally friendly products. There is going to be a major impact on the global supply chain. Need to look at the social side of it. Making changes here could lead to job losses for the very poor people we buy from in other countries. Need to address broader issues as well as carbon foot print. Need to make holistic decisions. SMEs have problems with lack of time, knowledge and money. Need a lot of addition communication within business. Business change and supply chain change needs a lot of communication in the business from the change agent – senior manager or whoever given the authority.

#### 3.7.3 Measuring and accounting (Facilitator, Paul Hooper, MMU)

*Participants: Mike Blackburn – BT, Rob Jarvis – BNFL, Mike Kelly – PwC, Alan Laird – Frodsham Consultancy, Philippa Wills – BitC, Geoffrey Piper - NWBLT*

Primary focus of the discussion group was on CO<sub>2</sub>. Recognition of core areas that are straightforward and build on these i.e. electricity bill can be used to create figures. Once firms have core requirements, they can add community work, travel etc. Need to then link with waste, water and consumption and to have a carbon penalty. Transparency of reporting practices and its standardisation is important. Stakeholders need reassurance about principles.

#### 3.7.4 Connectivity (Facilitator, Chrissie Gibson, MMU)

*Participants: Peter Connor – BT, David Kelly – AstraZeneca, Jon Saunders – Liverpool University, Paul Stowers – GONW, James Wright – Virgin Trains, Steve Ruddell - ABB*

Changing the way we work is important – flexible working can make a big difference to emissions and quality of life. Need to look at transport – public transport needs to be reliable and cost effective. Rail can be a good option for commuting/work related travel as have wi-fi etc and people can work on the train – improves productivity. Need to increase amount of renewable energy in the mix and improve policy framework. The group concluded that legislation was needed to enforce change. The immediacy of the problem and ineffectiveness of current voluntary systems made it important.

#### **4. Discussion**

The evidence presented in this report suggests that sustainability is firmly on the agenda of NWBLT member companies and that climate change is an issue that is receiving high level attention. However, it appears that in order to move society to a truly sustainable state and minimise the impact that climate change will have in the longer term, significant change is still required. As a region, it is apparent that the North West of England has a particular challenge in reversing the trend in emissions growth in recent years and the Climate Change Action Plan falls some way short of being ‘leading edge’, most notably when compared with London.

The data from this study suggests the following will be essential:

- Leadership, including demonstrating commitment, identifying ways forward and encouraging others.
- Clear and trustworthy sources of information.
- Comprehensive and transparent systems to measure, manage and account for environmental performance, particularly related to carbon management.
- Effective policy measures, including legislation and market mechanisms.
- Co-ordinated global efforts.

#### **5. Recommendations**

The main objective of this project is to make recommendations as to how the NWBLT can contribute to meeting the climate change challenge. The evidence gathered from the study identifies a number of activities that NWBLT members could support. These include:

- Demonstrating collective commitment.
- Developing and sharing best practice.
- Lobbying the Government on key issues, working between business and government to identify what should and can be done.
- Support other initiatives, such as the BitC Mayday Company pledges.
- Developing standards for sustainable procurement.
- Developing prizes/awards and/or supporting other relevant award programmes.

This report will present recommendations in terms of how the Team can exercise leadership, with subsidiary recommendations related to demonstrating commitment and the four areas addressed by the action groups.

## 5.1 Leadership

As a group of senior executives from some of the region's leading companies, the NWBLT can play a powerful leadership role. There are therefore a number of activities the Team could undertake:

- The future is likely to be very different from the present, with the only certainty being that the global business arena will continue to change rapidly. As a result, future leaders will need a broad range of skills to enable them to take on the mantle. By providing opportunities for people to gain these skills in the region, NWBLT members can both strengthen their own organisations and enhance the region's ability to attract and retain high quality people, such as recent graduates. Setting up a 'junior' NWBLT, could provide both a valuable, fresh perspective for the Team and create learning opportunities for internal leadership programmes.
- As a 'critical friend' to the NWDA, the Team can challenge the direction of regional strategy. If the region's CO<sub>2</sub> reduction target is, as has been suggested, inadequate (a view gaining increasing support), an urgent review of current plans is required. Factor in rising concerns about potential shortfalls in fuel supplies, the long lifespan of major capital investments and the likely shift in economic power from the G7 to the E7, making the right decisions now will be essential if the region is to adapt to an increasingly turbulent world.
- This project has clearly shown that Team members and their organisations are committed to sustainable development and that many are involved in debating the future. Reaching a consensus position and exerting collective influence as widely as possible can add significant value. An excellent opportunity to do this would be to press for the Liverpool 2008 Business Summit to focus on the challenges in achieving a sustainable global society.
- Sharing experiences and expertise and coaching other organisations could help develop momentum towards achieving the changes required to move humanity back from beyond the ability of the planet to sustain us. As well as working with SMEs (small and medium enterprises), the experiences of NWBLT member companies could be very useful to large, complex public organisations like NHS Trusts. The NWBLT forum programme and mentoring schemes are ideal vehicles to achieve this.

## 5.2 Commitment

- Develop a consensus position statement (possibly within a charter) that all members sign up to.
- Put sustainability at the heart of the new Action Plan.
- When evaluating potential new members, make a commitment to sustainability a criteria.
- Make a collective commitment to reducing emissions that supports the achievement of UK and global targets.
- Make a collective commitment to working with supply chains to improve environmental performance.
- Define policies on issues such as biofuels and carbon offsetting.

## 5.3 Education

- Provide educational resources and support for other organisations, for example, through the NWBLT website and targeted events, such as the one planned for November.
- Work with schools and universities to promote understanding of the issues and help to develop curricula that prepare young people to meet the challenges the future is likely to bring. Activities could range from working with enterprise schools through to influencing the content of MBA programmes.

#### 5.4 Research and innovation

- Promote opportunities for combined research activities, looking at the possibility of tapping into relevant funding streams. For example, the European Commission has ring-fenced money to investigate intelligent energy solutions for the future.
- Develop a programme to promote innovation for sustainability, potentially linking with relevant regional award ceremonies such as the North West Business Environment Awards. Awards to be supported could include energy/carbon reductions, adaptation measures, technology development, entrepreneurship, etc.

#### 5.5 Connectivity

- Continue to support and promote the work of the North West Flexible Working Group.
- Exert influence at local, regional and national levels to promote sustainable transport initiatives.

#### 5.6 Public Relations

- Promote the environmental technologies sector within the region and beyond.
- Promote the message of sustainability and publicise initiatives undertaken as widely as possible, to demonstrate that the North West of England is actively addressing sustainability issues and preparing for climate change and will therefore be a 'great place to do business' for many years to come.

### **6. Conclusion**

This report has reviewed the current understanding of environmental issues, particularly in relation to climate change. The evidence suggests that simply continuing to operate 'business as usual' will have catastrophic consequences around the world and will impact on the UK both directly, and as a result of impacts on global supply chains. The huge scale of the problem and the urgency of the challenge to address it are clear.

The data collected in this project indicates that environmental issues are being addressed by the organisations involved and that there is significant expertise within the Team to help other organisations to reduce their environmental impact and influence the agenda at all levels, from local communities to global agreements.

As a leadership team it is suggested that there is no more important issue that NWBLT can focus on, as unless current trajectories are reversed it would seem that continued economic prosperity and quality of life will be under severe threat. However, it is also clear that the human species has a history of ingenuity and applying that resourcefulness to addressing the issues is the only hope of securing our future. The question that remains is whether today's generation has the will to put in place the mechanisms to achieve a sustainable society.

This report therefore challenges the North West Business Leadership Team to use its collective influence to lead the way in creating a society that will thrive, both now and for the children of tomorrow.

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## Appendix 1

### NWBLT member's participation in this project

<b>Company</b>	<b>Team member</b>	<b>Date</b>	<b>Other interviews/participants</b>	<b>Date</b>
ABB UK Ltd	Trevor Gregory		Steve Ruddell	08/02
Addleshaw Goddard	Paul Lee		Trisha Hughes & Marcus Jamieson Pond	03/26
Astra Zeneca	Will Spinks		Richard Quenby	
BAE Systems	Michael Turner		Nevil Hilton	03/19
	Nigel Whitehead		Jon Farmer	12/03
BNFL	Michael Parker	02/12	Rob Jarvis & Dorothy Seed	02/12
Bruntwood Estates	Michael Oglesby	04/29	Iain Grant	
BT	Mike Blackburn		Ian Taylor	05/18
Co-operative Group	Martin Beaumont (CEO to 31/07/07)	05/15	Chris Shearlock	07/04
	David Anderson (CEO of CFS)			
The Cheshire Grosvenor Ltd	Karen McCormick		Frank Harrington & Maria Mathieson	03/19
Hill Dickinson	Mark Preston	20/08	Niall Tipping	
Innovia Films	Tony Wilson	07/23	Steve Kelly	
KPMG	Bill Lowther	29/09	Stuart Turnbull	
LWSDG	Malcolm Edge	07/04	Gaynor Emuss	07/04
Manchester Airport Group	Mark Newton-Jones		David Boardman	04/04
MBNA	Geoff Muirhead	05/25	John Twigg	
Peel Holdings	Hugh Chater		Karen Hanmer	02/27
	Robert Hough		Andrew Dutton	05/09
Pilkingtons			Peter Nears	28/09
PwC	Stuart Chambers	03/02	Allan Norris	03/02
	David McKeith	03/20	Ann Hudson & Sue Reid	03/20
Siemens T& D			Mike Kelly	
Speedy Hire plc	Ron Smith		Steve Taylor	07/20
Unilever R & D	Steve Corcoran		Mike McGrath	08/20
United Utilities	Alan McKinnon	03/13	Caroline Cooper & Amanda Lane	03/13
	Phillip Green		Chris Matthews	16/08
	Clive Elphick	02/27		
University of Lancaster	Paul Wellings	05/23		
University of Liverpool	Drummond Bone	05/09	Jon Saunders	05/09
Virgin Trains	Charles Belcher	04/23	James Wright	04/23