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Prepared by Bee Bee Developments Ltd

Winning the Carbon Challenge

The Purpose for the Region



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Imagine a scenario...

The year is 2021.

Over the past 15 years, the UK has changed immeasurably; the catalyst for which was climate change. Described in 2006 as 'the single most important issue we face as a global community', leaders and innovators understood this to be a tipping point in human development; an opportunity unrivalled since the Industrial Revolution.

The dawn of the low carbon economy heralded a reinvigoration of the UK's inventive and entrepreneurial spirit as government, business and industry wrestled with the new challenge; how to enhance economic prosperity and maintain a high quality of life whilst mitigating climate change and avoiding environmental degradation; how to instigate change without restricting choice or imposing harsh regulatory measures?

One region seized the chance to show that this was achievable; a region which was to experience unparalleled growth over the forthcoming years. The region capitalised on the growth to help deliver a resource efficient, low carbon economy with a resulting step change in the potential and prosperity of the region.

That region was North Northamptonshire.

The revolution has been significant. Whilst other regions have produced 'one off' green housing developments, environmental business parks or eco-leisure facilities, nowhere else in the UK has provided such a comprehensive response to the challenge of climate change; bringing a new purpose and uplift to the entire region.

Carbon emission reduction and environmental safeguarding has permeated every aspect of the way the region thinks, lives and works; from transport preferences to consumer choices; from education to employment; working life to leisure time – this has been vital to the region's success.

The region has hosted the emergence of a vibrant, innovative environmental goods and services sector. By providing world class research and development facilities, a skilled workforce in tune with green issues and a market for environmental goods associated with the new developments, the region has become a centre of excellence for environmental technology development, complemented by a dynamic service sector and the UK's leading low carbon distribution and warehousing industry. These new economic generators have brought excellent investment and employment opportunities, re-igniting the region's prosperity.

Now let's return to 2007...

North Northamptonshire has a choice.

It can either embrace the opportunity that lies before it; taking on the carbon challenge and becoming a global example of how prosperous low carbon, resource efficient economies will be delivered in the future – or it can simply provide what is required by Government; build 25,000 new houses to the minimum affordable standards, 'patch up' an already overstretched car reliant transport infrastructure and generate mediocre employment opportunities that may not support the increase in population.

This document explores this opportunity, and gives examples of projects that will deliver a bold and ambitious vision:

North Northamptonshire home of the green agenda



Climate Changing the UK

The Green Revolution

"The time is right to look at what it would mean for the UK over the period of 15 to 20 years to create a post-oil economy - a declaration less of 'oil independence' and more the end of oil dependence."

David Miliband, Secretary of State for the Environment, March 2007.

The Stern Report estimates that if action is taken immediately, mitigating climate change will cost the UK 1% of GDP per year. If it delays its response, the cost will rise to between 5% and 20% of annual GDP by the end of the century².

To encourage higher standards in environmental performance and to kick start the development of a post oil economy, national and local Government have set targets, tightened regulations and offered incentives including:

- Launching a draft Climate Change Bill committing the UK to reducing carbon emission to 60% of 1990 levels by 2050.
- A target of generating 10% of UK's electricity from renewable sources by 2010, with a possible rise to 20% by 2020, dependent on the current Energy Review.
- Through the Renewables Obligation Scheme, requiring electricity suppliers to source a rising percentage of electricity from renewable sources, with a current target of 15.4% by 2015/16.
- Simplifying the planning process for energy generation projects, large and small.
- Offering grants worth £500m for R&D into renewable and low carbon energy, in 2002-2008, with access to a further £300m to reach commercial deployment.
- Providing energy efficiency advice for homeowners and business through The Carbon Trust and Energy Savings Trust.
- Implementing the EU Emissions Trading Scheme and the Climate Change Levy to encourage business to save energy and cut emissions.
- Launching the Code for Sustainable Homes to make new developments zero carbon by 2016.
- Establishing subsidised household insulation schemes and measures to increase the efficiency of existing housing stock.
- Introducing the Renewable Transport Fuel Obligation and reforms to Company Car Tax and Vehicle Excise Duty to incentivise take up of lower carbon transport, fuels and vehicles.

"The time for debate about whether human activity is changing the climate has passed. The science is clear. The challenge now is for the business community, government and society as a whole to decide how to respond. This poses a challenge to business, as a major source of emissions, but it also presents significant opportunities."

Richard Lambert, Director-General, CBI quoted in the Financial Times, January 2007

The transition to a low carbon economy need not be a hindrance to development; rather a significant opportunity in terms of providing regional uplift, place-making, a sense of purpose and increased job provision.

The UK's interest in sustainability and the markets for environmental products and services are growing rapidly; the sustainable development agenda sets clear action for 'greening' the public sector, with a particular focus on procurement whilst businesses are working to reduce their ecological footprints, so as to reduce costs, capture market share and maintain investor confidence.

Consumers are also voting with their pockets – home owners expect developers to build to higher environmental standards, for which they are willing to pay more and there is a readiness to adopt sustainable lifestyles. Nearly two-thirds of UK consumers are more likely to buy from a business they think is taking action to tackle climate change³ and an estimated £4.1bn was spent on 'green home expenditure' in the UK in 2005, an 11% increase on the previous year⁴.

The environmental sector has shown substantial growth in recent years; globally, more than £36bn was invested in clean or renewable energy or clean technology last year⁵, a 43% increase on the year before; in Europe, venture capital investment in 'cleantech' companies amounted to £92mn in 2006, up from £52mn in 2005⁶. However, it is the future growth predictions which demonstrate the scale of the sector's potential. In 2004

17,000 UK companies identified themselves as working in the environmental industries – accounting for a turnover of £25bn, providing around 400,000 jobs; it is estimated the domestic market may expand to £34bn by 2010 and to £46bn by 2015⁷.

Looking at the market for UK renewable energy generation alone, it is calculated that between £15 bn - £19 bn capital expenditure is required, to meet the 2020 aspiration of producing 20% of electricity from green sources, which would provide up to 35,000 jobs⁸.

The Green Revolution has the potential of the dot-com boom of the 1990's but it will be more sustained, bringing greater prosperity.

North Northamptonshire cannot afford to miss out on this opportunity.



² Stern Review Report on the Economics of Climate Change, October 2006

³ Carbon Trust Survey, Nov 2006.

⁴ The 2005 Ethical Consumerism Report 2005, compiled by the Co-operative Bank, with the New Economics Foundation and the Future Foundation.

⁵ Michael Liebreich New Energy Finance, Dec 2006

⁶ Dow Jones VentureOne and Ernst & Young Cleantech Investment figures, Feb 2007.

⁷ Study of the Emerging Markets in the Environmental Sector, Environmental Industries Unit, November 2006

⁸ Renewable Energy Supply Chain Gap Analysis, DTI, April 2005



The Carbon Challenge

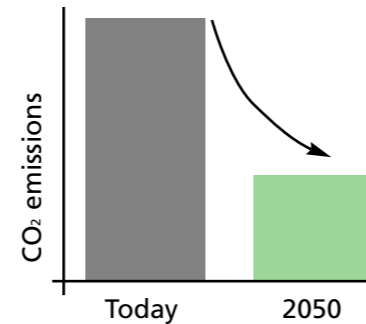
Government has set the target of the UK reducing its CO₂ emissions to 60% of 1990 levels by 2050.

North Northamptonshire can respond to this challenge becoming **the first region to reduce its carbon footprint by 60% ahead of 2050.**

- Government has set the agenda.
- Business realises the opportunity.
- Individuals will take responsibility.

Now is the time for ACTION

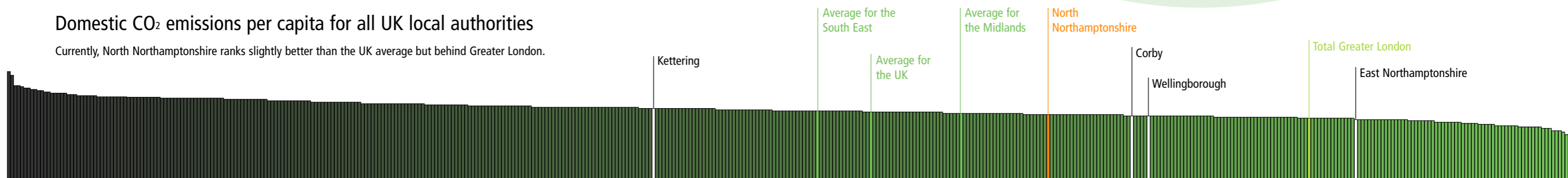
The graph below demonstrates that the region is starting from a strong position, in terms of its domestic CO₂ emissions per capita. By working together, North Northamptonshire can forge ahead of other regions and lead the UK's transition to a low carbon, resource efficient economy. Winning the Carbon Challenge will bring economic growth, higher standards of living and increased recognition to the region.



Winning the Carbon Challenge will give the region its purpose.

Domestic CO₂ emissions per capita for all UK local authorities

Currently, North Northamptonshire ranks slightly better than the UK average but behind Greater London.



Why North Northamptonshire?

North Northamptonshire is at a significant turning point; huge growth is about to occur and it is this growth which makes the region best placed to lead the UK's response to climate change.

The scale of growth is a catalyst for delivering change across the region.

- 52,000 new homes.
- 43,000 new jobs.
- 40% increase in population.

Investment in the region between 2007-2021 is significant.

- £1.2bn in transport infrastructure.
- £200mn on new educational facilities.
- 1.25mn sqm of new commercial development.

The growth is driven by teams with a shared vision for the whole region.

- 1 urban regeneration company.
- 1 private development company.
- A supportive public sector.

The growth is achievable in a short time frame.

- Most of the land required has been bought or safeguarded.
- Development has started - ahead of schedule and in advance of other regions.

The region is suited for developing a green sector:

- At the heart of UK.
- Land and rental values are the lowest of any area located one hour from London.
- The region has a history in manufacturing.
- It sits between the knowledge and facilities of Oxford, Cambridge, Nottingham & Northampton.
- It has excellent access to a strong rural economy.

Winning the Carbon Challenge will not be easy, but with a unified vision, strong governance and an ambitious programme of activity, it will be achievable.

Source - 'Local and Regional CO₂ Emissions Estimates for 2004', produced by AEA Energy & Environment for Defra

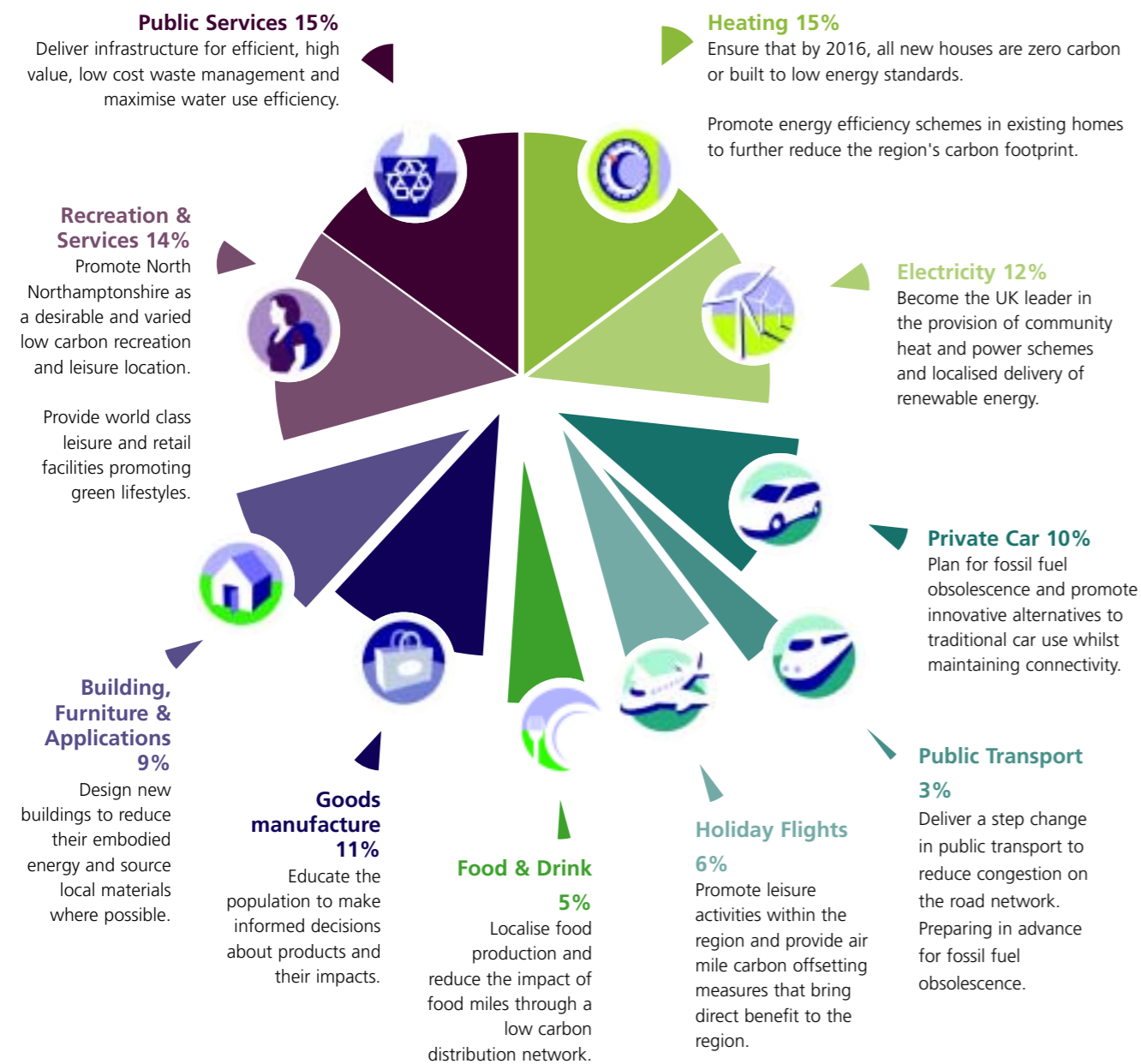
Delivery & Governance

If it is to win the Carbon Challenge, the region needs to target the sources of its CO₂ emissions.

The chart below shows the current UK average personal carbon footprint which equates to 11 tonnes of CO₂ per annum.

Suggestions are given as to how North Northamptonshire can act to reduce emissions from each source.

This is the starting point.



The following pages describe in more detail some of the infrastructure and projects, which, with input and commitment from all of the region's stakeholders, will ensure that North Northamptonshire takes the required steps to become a world leading, low carbon economy.

The Rockingham Institute

Located at the heart of the UK's Green Agenda, the Rockingham Institute will lead the national response to the challenge of climate change and drive the region's progress towards achievement of its CO₂ reductions against a set time frame.

Expertise, knowledge and technologies developed through the Institute's work will be applied nationally and exported worldwide.

The key roles of the Institute will be:

- Providing governance
- Nurturing innovation
- Supporting sector development
- Co-ordinating education and development
- Interfacing between business, public sector and the general public



Lifestyle

North Northamptonshire will become a region of global significance if it can encourage the region's inhabitants to choose low carbon lifestyles and bring about significant improvements in the environmental performance of existing housing stock, in addition to delivering low energy new developments.

Changing hearts and minds within the region will require a range of exciting learning experiences, excellent leisure and retail facilities and schemes which will improve quality of life whilst minimising environmental impact.



Rockingham Performance Park

With support from EMDA, work has begun on a world class centre of excellence which will address the issues of lifestyle and climate change. The Park will provide a vital interface between the innovators, business and members of the public and will aim to:

- Educate and inform visitors about climate change.
- Provide greater understanding on how individual lifestyle choices effect the wider environment.
- Become a centre for research and academic excellence on climate change and its mitigation.
- Provide a test bed for emerging environmental technologies.

Located within the Park will be 'Future World' - a national exhibition demonstrating the issues of climate change and innovations for a low carbon future, 'Lifestyle Village' - showing tomorrow's low energy houses, a green retail park, a renewable energy technology park and the headquarters of the Rockingham Institute.

The Park will provide an exciting vision of tomorrow's low carbon, resource efficient society, capturing imaginations and attracting visitors from around the world.

Regional Parks and Eco Tourism

The River Nene Regional Park pilot scheme will provide increased access to existing and new leisure, recreational and educational facilities and link local urban centres. The pilot scheme aims to reduce the need to travel out of the area for leisure activities and provides opportunities for walking and cycling along new and improved green routes as attractive alternatives to using the car.

The Parks programme will support new green leisure and recreational facilities as well as encourage the development of local green supply chain networks to reduce dependency on goods and services from outside the area.

Educating Tomorrow's People Today

Through delivery of an education programme in every secondary school in the region, students will learn about low carbon living, see environmental innovation and inventions and hear about the opportunities the emerging environmental sector provides for the future. They will be provided with the skills and knowledge to debate and decide how they can instigate behaviour change at school and in the home.



The Green Household Clock

The Green Clock is a monitoring device which indicates if a household is on target for a percentage reduction in utility usage. The clock is visually interesting, easy to understand and can be displayed anywhere in the house. It glows green if the household is on target to achieve its reductions and red if the targets will not be met. The clock also gives more detailed information about utility usage and tips on how to achieve the household target.

A pilot scheme is proposed whereby any household achieving a target reduction in energy and water use would benefit through a reward scheme.

The long term aim is to introduce the Green Clocks into the majority of the region's existing houses.

Personal Carbon Trading

North Northamptonshire could pilot a regional Personal Carbon Trading scheme.

The Royal Society of Arts, Manufactures and Commerce (RSA) is developing personal carbon trading schemes in the UK and has expressed interest in trialing pilot projects which compliment the region's green agenda.



Energy and resources

The threat of climate change, legislation, government targets and risks relating to long term fuel and raw material supply is driving change in utility and resource management.

The provision of a local energy generation projects, with a focus on using resources generated within the region will not only provide secure sources of heat and power at more stable prices, but will also create economic activity and employment opportunities.

Low Energy New Developments

New developments will meet the standards set out in the Code for Sustainable Homes, attracting homeowners who aspire to living in a low carbon community.

The new buildings will be designed to high specification of insulation, air tightness and heat recovery and may include integrated renewable energy equipment, although localised power generation associated with the development is likely to be a more cost effective solution to achieving low carbon targets.

Existing Homes Programme

Essential to reducing the region's carbon footprint will be the improvement of existing homes and buildings. Incentive schemes and education projects to encourage improved insulation, air tightness and occupant awareness should be promoted.



Localised Power Generation

The Energy White paper, due to be launched in April 2007 is likely to promote the development of localised power generation, with an emphasis on renewable sources.

The requirement to deliver low carbon new developments, provides an opportunity to link these developments with renewable energy schemes and increase the region's self sufficiency in terms of energy generation.

North Northamptonshire can become an exemplar on macro renewable power generation by:

- Solving problems associated with financing renewable energy schemes on this scale.
- Gaining support for low carbon energy generation schemes, specifically energy from waste, local biomass, ground source heat pump and wind turbine schemes which are directly related to the development.

Waste Management and Energy from Waste

The disposal to landfill of discarded materials is becoming more expensive and increasingly restricted; rises in re-use and recycling and alternative uses for 'waste' mean that more value is being derived from used materials.

The new developments will be designed so that recyclables and waste materials can be collected efficiently and cost effectively. A harmonised waste collection method should be developed across the region, so as to maximise recycling and reuse opportunities whilst reducing household confusion and apathy towards recycling.

Best practice waste disposal should be promoted, preferably incorporating energy from waste schemes to deliver heat and power to new developments and help achieve low carbon new developments. Particularly in early years, energy from waste is likely to provide the most effective solution to delivering low carbon development.

The countryside as a Resource

The move to a low carbon economy is a valuable economic opportunity for the agricultural sector. Not only is there a growing interest amongst consumers for locally produced food and farming standards, but the emergence of bio-fuels and bio-mass as alternatives to fossil fuel in transport and power generation provides farmers with an option for diversification. North Northamptonshire has a strong agricultural sector; this shift will bring benefits to the region's energy and food supply chains as well as increasing the region's self sufficiency.



Transport

To maximise the region's potential, Corby, Kettering and Wellingborough need to work as one; those working and living within them must see the opportunities for employment, investment, education, shopping and leisure activities as being within one region, one catchment, one landscape of possible journeys.

In addition, the pressures of congestion and climate change are likely to precipitate a move away from fossil fuel based transport and car dependency in the future.

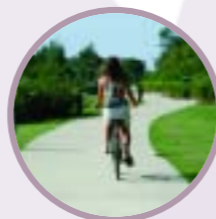
The solution, therefore, is to link the towns together with a very fast, frequent, convenient and efficient transport system which allows greater connectivity and modal shift across the entire region. This combined with planning for obsolescence in fossil fuel related transport now will produce benefits in terms of higher productivity due to avoided congestion delay, reduced expenditure on road maintenance, less air and noise pollution caused by a high volume of road traffic and increased perception of the quality of the area.

The Shuttle

A rail based transport spine is a key to maximising the economic opportunities for the region, whilst creating modal shift away from car dependency. With Network Rail, the concept of a Shuttle link between Wellingborough, Pulse Park, Kettering, Corby and Rockingham Performance Park has been developed. The service will be fast, frequent, cheap and powered by a renewable energy source.

The system is designed to track share where necessary with the existing mainline service in order to reduce capital outlay.

Operation of the Shuttle will not impact on the efficiency of the Midland Mainline rail services. Indeed, it should improve the speed of the Midland Mainline service to St Pancras section, acting as a mainline feeder from the wider North Northamptonshire region.



The Shuttle will allow for improved mobility between the three towns and allow each town to maximise retail, business and leisure potential more effectively than if served by a conventional bus public transport system. In addition, the proposed Shuttle service will unlock the potential of the region in terms of its transport links to London, Nottingham, Leicester and Derby.

This will be an exemplary transport solution, both in terms of track sharing capability and its potential to create modal shift away from private car use.

Intra-town Transport

Linking new and existing housing to the shuttle nodes and moving people around within the towns of Corby, Kettering and Wellingborough using advanced transport systems such as the ULTra personal rapid transit or high quality bus services.

'Green transport' infrastructure will be enhanced through the Nene Valley Regional Park Initiative to encourage more walking and cycling over short distances within the towns and to link urban centres with the surrounding countryside.



Personal Transport Solutions

North Northamptonshire hosts a motor industry with strengths in design and engineering. This, twinned with the scale of development, could allow the region to become a showcase for transport solutions of the future.

Schemes should have the combined outcomes of lowering the number of cars per home to one or less and reducing household expenditure on transport whilst improving people's ability to move around the region

Innovative solutions include:

1. Providing each new home with a electric (or non fossil fuel) vehicle, powered by a local renewable energy source (e.g. wind) providing low carbon local trips.
2. Establishing mechanisms to assist existing homes to take up non fossil fuel vehicles and public transport.



3. Facilitating integration with the public transport spine through the provision of subsidised parking and free 'recharging' of low carbon vehicles at Shuttle stations and parking nodes.
4. Encouraging vehicle manufacturers to develop non fossil fuel infrastructure pilot schemes in North Northamptonshire.



Business and Employment

Some growth predictions for the environmental sector have been outlined earlier in this Vision document; the opportunities are many and varied, with great potential for success. Establishing North Northamptonshire as the ideal business location for the emerging green sector is vital if the region is to lead the UK's shift to a low carbon economy.

The benefits to be gained from the growth will be maximised if specialist facilities and infrastructure are provided, backed up by a motivated and skilled workforce. Growth activity will be co-ordinated by a centre of excellence to nurture start up and existing companies and attract well established, high growth companies into the area. The region's economy and its inhabitants will enjoy increased success and prosperity as a result.

Low Carbon Distribution

Increasingly, businesses reliant on the distribution industry will feel the pressure of carbon taxation associated with the movement of goods. North Northamptonshire could promote itself at the forefront of low carbon distribution by developing a rail fed inland port thus reducing congestion and carbon emissions combined with state of the art, low energy warehousing.

Freight could be brought directly from Felixstowe by rail and managed at inland port sites at Collyweston, Stanion and Wellingborough. This will provide the basis of a high quality warehousing and distribution industry that could provide an additional 15,000 jobs in the region.

Test Beds and Markets

The emerging environmental technology sector will generate the products and lifestyle concepts required for the low carbon economy. The scale of growth in North Northamptonshire twinned with its promotion of the green agenda will make it well positioned to provide prototyping and market opportunities for these products and concepts in both new and existing homes.

The Rockingham Institute

As described earlier, the Rockingham Institute will become the UK's leading innovation centre for the environmental technology sector. Supporting activities relating to climate change only and using a light touch with minimal bureaucracy, the Institute will provide investment funding and a hub for research, expert advice and prototyping facilities encouraging start ups and university spin outs.

Its unique advantage will be its ability to facilitate the trial of new products within the new green housing, commercial developments and the UK's first low carbon motor sport facility at Rockingham as well as facilitating access to a local market attuned to environmental lifestyles.



Pulse Park

An environmental exemplar for B1 businesses parks, Pulse will attract significant employers to the region.

Pulse Park is designed to the highest specifications of energy and resource efficiency standards, with on site renewable energy generation and is planned to be connected by a low energy transport infrastructure to a highly skilled and attuned local population.

With excellent links to London and the South East, via its own shuttle stop, Pulse Park will become the location of choice for businesses wishing to demonstrate their green credentials.



Skills Development and Training

Key to the success of the region will be a motivated and skilled workforce. All secondary schools and colleges in the region will promote the range of employment opportunities within the environmental sector, whilst encouraging take up of the appropriate courses for these jobs. Training programmes, run by business for business will be delivered to adapt the region's existing skills base for the emerging sector and a new construction college will equip trainees with the skills to fill the jobs created by the housing growth.



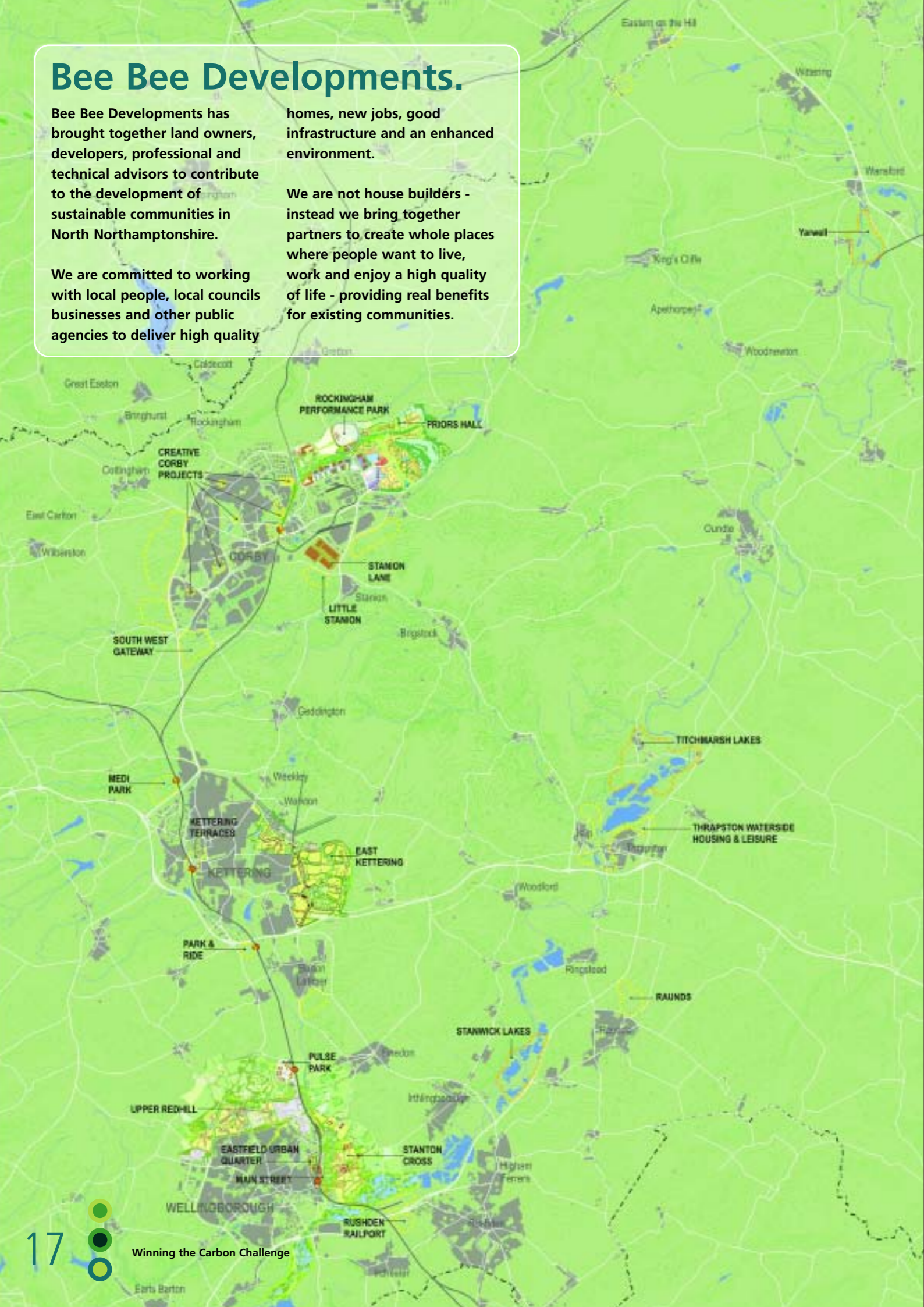
Bee Bee Developments.

Bee Bee Developments has brought together land owners, developers, professional and technical advisors to contribute to the development of sustainable communities in North Northamptonshire.

We are committed to working with local people, local councils businesses and other public agencies to deliver high quality

homes, new jobs, good infrastructure and an enhanced environment.

We are not house builders - instead we bring together partners to create whole places where people want to live, work and enjoy a high quality of life - providing real benefits for existing communities.



Regional Purpose
National Identity
Global Impact



Are you up for
the Challenge?

www.carbonchallenge.co.uk