



CO2Sense Yorkshire

Driving Yorkshire's low carbon economy



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The low carbon economy: Transforming Business

CO2Sense Yorkshire is committed to helping the region and its businesses make the shift to a low carbon economy. We are a not-for-profit company, owned and funded by the regional development agency, Yorkshire Forward. The region has already set itself a challenging target to reduce carbon emissions by 25% by 2016. CO2Sense Yorkshire intends to play a key role in helping the region meet this target. Global temperatures have risen by 0.74°C in the last 100 years (and by 0.4°C since the 1970s). The emission of greenhouse gases is now widely accepted as the main cause of this warming. Estimates suggest temperatures could continue to rise by between 1.1°C and 4°C on 1990 levels by the end of this century, and sea levels could rise by between 20cm and 60cm in the same period.

Yorkshire is the UK's economic powerhouse and its workshop. At the moment the region produces 7.5% of the UK's wealth – but 13% of its carbon emissions. That adds up to 90million tonnes of CO₂ every year; costing the region's economy a staggering

£22.5 billion. Much of the region's high carbon footprint stems from its reliance on heavy industry and power generation (most of it produced from burning fossil fuels). We emit more CO₂ than any other UK region – and more than any region in Europe apart from Germany's Ruhr Valley.

We want carbon emissions reduction to become a key part of what companies and organisations in our region do. And we want them to realise the full benefits of becoming low carbon through the entire life cycle of their operations.

Producing less carbon emissions, switching to renewable or low carbon forms of energy, and becoming more resource efficient can all help the region's businesses become more competitive. Companies save an average of 1% of turnover by implementing resource efficiency measures (or £1,000 per employee). It's the role of CO2Sense Yorkshire to help them do this.

Welcoming CO2Sense Yorkshire

In today's challenging economic environment, Business has to concentrate on the bottom line. The saying 'cash is king' has never been more significant.

Consideration of how your company can adapt to the low carbon economy can also make a bottom line contribution. Using less energy and resources to deliver the same outputs makes CO2Sense. I have certainly found that to be true within my own Group of manufacturing companies. Becoming more competitive in the UK or global marketplace is possible.

There are also substantial business growth opportunities for companies that can bring new products to market in the environmental sector.

Helping business to reduce CO₂ emissions presents opportunities to create new companies and to expand existing ones. This is a very positive way of creating jobs and prosperity in our region.

However, developing the necessary expertise can take time, a precious resource in most companies. CO2Sense Yorkshire has the technical expertise and practical ability to help you achieve your low carbon aspirations. Our region's economy and the global fight against climate change will depend on the success of all of us.

We are here to help you.



Barry Dodd

Barry Dodd
Chairman, CO2Sense Yorkshire

CO2Sense Yorkshire helps businesses and organisations to work more effectively and to cut carbon reductions at the same time.

We help businesses to cut costs by using less energy or using fewer resources. Working with our partner organisations, we have created a number of assistance programmes for businesses, which help them to improve their bottom-line performance while cutting their carbon emissions.

We help businesses to develop environmental products and services that meet the needs of the many organisations who are looking to cut their carbon emissions by using lower-carbon alternative products.

We help organisations – from businesses to community groups – to develop their own low-carbon energy. This includes heat from carbon-neutral woodfuel and electricity from low-carbon sources such as anaerobic digestion and hydroelectricity.

We help businesses to learn the skills that they need to cut through the jargon and the science, to understand what the low-carbon economy means. Businesses who understand this can stay ahead of the competition by developing business plans that recognise where the opportunities are: it's our goal to make sure that businesses in our region have these skills, enabling them to seize these opportunities.

Working with a range of industry partners, we have a vision to turn Carbon Capture and Storage (CCS) into a reality in our region, with a multi-billion-pound CO₂ transport pipeline linking all the major emitters in the region so that their CO₂ emissions can be safely stored in the depleted gas fields of the southern North Sea.

Financial Intelligence

None of this happens without funding. But the way that we enable this to happen is central to our business philosophy. We

don't simply hand out public funds: we help organisations to find funding from a range of sources, including banks and venture capital, and we help them to make sure that their business plans are investment-ready. When we do provide direct funding, we use our knowledge of the industry to enable us to spot the projects that will succeed. Often, we expect these projects to repay the funds when they become successful, so that we can recycle these funds into other projects.

We've helped hundreds of businesses in Yorkshire and Humber. We will continue to work hard to make sure that our region leads the UK in successful, low-carbon, innovative businesses and organisations.



Joanne Pollard

Joanne Pollard
Chief Executive, CO2Sense Yorkshire

"We help businesses to cut costs by using less energy or using fewer resources"



Carbon Capture and Storage

CO2Sense Yorkshire is committed to helping the Yorkshire and Humber region to reduce its carbon emissions and switch to renewable and low carbon methods of meeting its energy needs. We're realistic though, and recognise that this can't be achieved overnight. Over the next few decades we fully expect that fossil fuels will remain our main source of energy. That's why we have recently launched a new programme exploring the potential of large scale carbon capture and storage (CCS) technology to limit the impact of current CO₂ emissions from heavy industry and power generation using fossil fuels. The programme offers the potential for Yorkshire and Humber to become a global leader in this technology – showing the world how it can be done

Feasibility

To date, our feasibility studies have explored the opportunities, challenges and risks of a CCS project for the region – which would capture CO₂ produced by conventional power stations and heavy industry along the M62 corridor and store it in depleted gas fields and saline aquifers under the southern North Sea. The CO₂ could remain there indefinitely, preventing its release into the atmosphere and its contribution to climate change. Yorkshire makes an ideal candidate for a demonstration project – because of its easy access to a cluster of large scale emitters of CO₂ (which between them emit about 60 million tonnes of CO₂ a year) and

potential storage sites off our coastline. The estimated costs of building a pipeline – into which the large scale emitters could pump their CO₂ – is at least £2 billion and it's estimated that construction could create £1.8 billion in gross value added for the region as well as support 55,000 jobs. Operation of the pipeline could sustain 2,400 jobs for the region and create £126 million of GVA annually. CO2Sense Yorkshire is currently working with industry partners to develop the case for a CCS demonstration project in the region and to explore possible sources of funding.



Low Carbon Economic Area

Yorkshire and Humber has awarded the status of Low Carbon Economic Area for carbon capture and storage. This status recognises the combination of geographic assets and the skills and industries that make this region the ideal location to develop a CCS network.

We will be sharing the knowledge we gain through our programme to assist the deployment of CCS technology nationally. We will also continue to work on the strategic case for CCS deployment in the region, support technology development and innovation, ensure there is a sufficient skills provision, promote supply chain opportunities, foster public understanding and then share the information gained with the Office for Carbon Capture and Storage and other regions wanting to deploy CCS.

How we can help you

We support the region's businesses and public sector organisations to be more competitive and efficient while reducing their greenhouse gas emissions. We aim to help organisations:

- Find markets for innovative low carbon products
- Make better use of their resources
- Become more energy efficient
- Access renewable energy supplies
- Generate their own renewable energy
- Learn how to win on the carbon trading market
- Adapt to the challenges and opportunities of climate change.

Our teams have extensive experience of supporting and advising businesses on implementing low carbon strategies and practices. We can show you how to help the environment, reduce your costs and improve your reputation.

Access to support

Whether you're a businesses with an idea for a low carbon product or service, or a company looking for ways to reduce your greenhouse gas emissions (and your costs), we can help. Working together we can protect the planet and grow stronger, better businesses. Right now, our region's share of the global market in low-carbon technologies is small. But it's been estimated that market could be worth £500 billion by 2050. And with annual carbon emissions estimated to cost the region £22 billion every year, can we afford not to play our part?



Sourcing and using low carbon energy



Case study: Bioflame

CO2Sense Yorkshire supported Bioflame in North Yorkshire when it wanted to demonstrate the viability of a project to turn waste wood and fuel into heat and power.

The company turned to CO2Sense for technical and financial support when it built a combined heat and power plant.

CO2Sense helped Bioflame get the plant hooked up to the national grid and advised on compliance with the Waste Incineration Directive and how to gain Renewable Obligation Accreditation.

The plant became fully operational in December 2007, and got off the ground with a £200,000 loan from CO2Sense and help with 50% of grid connection costs. The plant saves 1,700 tonnes in carbon emissions each year.

CO2Sense provides advice, investment and support to develop new and renewable energy technology in Yorkshire and Humber. We bring together customers looking for new energy solutions with suppliers who can meet their needs. And across the region, we are getting actively involved in new energy projects to make them happen. In the last year, our projects have saved 178,588 tonnes of carbon dioxide from being emitted, and this figure is set to increase in the next twelve months.

There are lots of economic opportunities arising out of the switch to renewable and low carbon energy supplies. And we are here to ensure the region makes the most of these opportunities.

Growing markets

A great example of this was our £6m joint venture with Dalkia to develop the largest wood pellet mill in England. The mill has the capacity to produce power for 13,000 homes. It will also save up to 65,000 tonnes of CO₂ every year. This mill makes biomass energy a viable fuel source for the region, and has an initial production capacity of 50,000 of wood pellets tonnes per annum, with the potential to expand to 150,000 tonnes every year. The mill has created seven jobs, with more envisioned for the future.

We're investing a further £1m over the next three years to support and grow the market for wood pellet fuel in the region. We can also help companies make the

switch to sustainable fuels, by, for example, providing grants to convert boilers to run on woodfuel. Or we can help with funding to buy capital equipment to turn waste wood into sustainable fuel.

We form partnerships with private and public sector organisations to fill resource and funding gaps to accelerate the development and deployment of new energy technologies. We also work with partners to fill knowledge gaps and address market failures. This includes organising training courses, conferences and events, knowledge sharing and information services.

Sometimes finding the resources to make a renewable project happen can be difficult. That's where CO2Sense comes in. In the last year, we have secured £4,672,655 in private sector investment for renewable energy and woodfuel projects in Yorkshire and provided £415,070 in grants and loans.

We have built up an impressive reputation in project development. This means we can support all activities during the development phase including negotiating planning and environmental consents, agreeing technical designs and awarding construction contracts. We also help renewable energy projects maximise their returns by providing advice and support on getting the best price possible for their output.

Helping your green business prosper

Reducing carbon means reducing costs. Businesses of all sizes are looking for new products and services that will help them to reduce their use of resources like water and energy, and to help them to produce less waste through reuse or recycling. And with legislation increasing the costs of landfill and carbon emissions, there has never been a better opportunity for companies that can help them to achieve this.

Meeting the demand for these products is an important opportunity for companies within the region. The markets for some of the products made by local businesses are in some cases national and global. Companies can take a share of the £3 trillion global market that green businesses currently make up – a market that is estimated to rise to £4.5 trillion by 2015.

We help resource efficiency sector businesses to start up, grow, and launch new green products and services. We research and develop new markets, help businesses access funding, and provide investment grants. It's all about creating a virtuous circle – creating demand for resource efficiency products and services and then supporting environmental sector businesses to fulfil that demand.



Case study: Econoplas

Econoplas makes a range of innovative drainage products from recycled mixed plastics, including golf course and sports field drainage, green roofs and façades, and sustainable urban drainage systems.

CO2Sense Yorkshire has helped Econoplas, providing funding to prove and demonstrate its products while building and commercialising the business.

Econoplas products out-perform competitors in a wide range of drainage applications. They have global potential, dealing with a problem waste stream whilst reducing carbon emissions by 1.6 tonnes per tonne of plastic recycled.

CO2Sense Yorkshire and other introduced support providers have conducted research for Econoplas to secure sources of recycled plastic, provided a marketing strategy, and helped develop its production process, with the aim of securing further private sector funding to enable the business to fulfil its amazing potential.

With our support Econoplas has:

- Attracted £1 million of private sector investment to take the business from R&D start-up to a commercial operation
- Grown its recycling to over 1,000 tonnes of plastic per year
- Created 3 new jobs
- Saved over 1,600 tonnes of CO₂ per year.

Econoplas is a green success story: its products are in prestigious locations including Marriot and DeVere hotel resorts, projects supported by the Football and Rugby Associations, New Jersey's Trump National Golf Club and potentially the 2012 Olympic sites.

“Businesses of all sizes are looking for new products and services that will help them to reduce their use of resources”

Improving your resource efficiency



Case study: Cidon Construction

Cidon Construction is a construction company located in Barnsley, South Yorkshire, which took part in the Environmental Management Systems project, run by Groundwork in partnership with CO2Sense Yorkshire. By taking part in the project, Cidon has made annual savings of £18,600.

The project has been designed by Groundwork to help companies to implement Environmental Management Systems that will help them monitor, manage and ultimately reduce how much waste they send to landfill and how they use their resources. Cidon made their savings by challenging old processes and looking at how they can use or process waste to divert it from landfill.

CO2Sense helps Yorkshire's businesses save money and reduce emissions by using resources, energy and water more efficiently. Inefficient use of resources is a major drain on our region's economy, and it has huge environmental implications. For every £1 million of income we create, we produce 600 tonnes of waste – nearly twice the UK average. It is estimated that businesses in the region actually waste around 25% of the energy they pay for. And as the cost of traditional landfill disposal continues to rise (landfill tax will almost double to £72 per tonne by 2013/14) and energy costs continue to rise, our region has to act. Many of these costs can be avoided by using less water and energy, creating less waste, and designing out inefficiency in products and services. Research shows that the region's businesses could save £553 million per year through low or no cost resource efficiency improvements. CO2Sense can help your business be more competitive.

Transforming waste

Funded by Yorkshire Forward and the European Regional Development Fund, our team will invest £9.8 million over the next three years to transform the way we use resources, energy, water and how we deal with waste. We help businesses in the region to use water, energy and waste more efficiently, to introduce greener design and environmental management. We act as the region's central hub on resource efficiency.

Working through Business Link and other regional and national partners such as Carbon Trust, Envirowise, local green business clubs and other CO2Sense Yorkshire-funded projects, we are helping all businesses in the region to use water, energy and waste more efficiently, to introduce greener design and environmental management.

Over the next few years we'll be monitoring our performance closely – through a resource efficiency indicator which will measure the amount of CO₂ we produce for every £1 million of Gross Value Added created in the region. Watch this space.

Managing carbon emissions

CO2Sense works with Yorkshire's biggest companies and organisations to help the region make the switch to a low carbon economy. With our legacy of heavy industry and power generation, Yorkshire and Humber produces more CO₂ than any other UK region. Now we've set an ambitious target to reduce our emissions by 25% by 2016. There are compelling business reasons to do this. By decreasing carbon emissions and making business processes as efficient as possible, companies can make substantial financial savings. And legislation is making emitting carbon dioxide increasingly expensive. CO2Sense can help your organisation to make these reductions.

Sharing knowledge

Our team works on a bespoke basis with large companies; we listen to their challenges and develop methods of addressing them. We run knowledge sharing events and workshops to spread the word across the region – giving organisations a chance to hear from leaders and experts in the field. In the past, these have included events about specific technologies, upcoming legislation and different sectors. We host low carbon innovation events and awards to showcase best practice, and operate a research and innovation network to keep businesses in touch with cutting edge knowledge and new developments.

We work with organisations to help them adapt their business plans to take account of the inevitable changes to the business environment that climate change will bring. The impact will be felt across areas such as changes to the supply chain and infrastructure location; we're here to help you adapt.

We can also help with advice and guidance about carbon trading. Carbon Trading Yorkshire worked with 44 organisations last year, all of whom benefitted from a simulated Carbon Trading setting, which allowed them to test trading strategies and ensure that they are ready when the Carbon Reduction Commitment is implemented.

Ultimately, we can help large organisations to improve their resilience, competitiveness and efficiency in an increasingly low carbon world. It's good for the environment, and it's good for business.



Case study: Next Plc

Clothing and Homeware retailer Next approached CO2Sense Yorkshire when it wanted to explore ways to reduce its energy consumption – and its carbon footprint.

Opportunities for savings were identified in the company's warehousing operations. With help from CO2Sense, Next has replaced its current T8 light fittings with T5 49 watt fittings which use less energy, but importantly still provide the same light output.

The switch is expected to save 3,875 tonnes of CO₂ per year – nearly 10 per cent of the company's carbon emissions from its warehousing operations.



“CO2Sense works with Yorkshire's biggest companies and organisations to help the region make the switch to a low carbon economy”

To find out how CO2Sense
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thrive in a low carbon economy,
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