

Carbon Reductions in Herefordshire; 30 Opportunities to Learn from Global Best Practice

Theme	No	30 Inspirational Projects: Global Best Practice	30 Proposals for Herefordshire	How does this save CO2?
Visionary Planning: Setting Goals, and making the transition from fossil fuels to renewables.	1	The island of Samsø, Denmark, in 1997 set itself the visionary goal of transforming its economy to be powered by 100% renewable energy in a decade. By 2007 it had achieved this challenge, gaining global recognition.	If Herefordshire Partnership set very ambitious targets for CO2 reductions (100% by 2030 or 2040?) it could attract much help, support and interest from around the world.	Samsø has done detailed analysis of reductions of several forms of pollution, including CO2. It can be said that the island is now carbon negative due to wind energy exports to the mainland.
Visionary Planning: Setting Goals, and making the transition from fossil fuels to renewables.	2	The Spanish electricity generation industry is leading the World in terms of making the transition from Fossil fuels to Renewables. Solar and wind are expanding rapidly, with hydro, geothermal and biomass all playing a role. Nuclear power, though still important, plays a diminishing role.	It would appear that the era of cheap fossil-fuels is drawing to a close. Future technologies are unknown, but it is predictable that renewable forms of energy will become ever more important. It is proposed that Herefordshire Council make a public statement to the effect that the transformation to a post-fossil-fuel economy will become a central aspect of policy and planning	Huge reductions of CO2 emissions are required to meet climate change mitigation targets. The transition to an economy based largely on renewables is necessary, possible and desirable. If we manage this transition well there will be many social, economic and ecological benefits. Herefordshire could have the capacity to generate significant amounts of energy.
Visionary Planning: Setting Goals & Radical Co-operation across Europe.	3	The Aalborg Commitments originated in the Danish City of Aalborg in 2004, and have since been signed by over 620 cities and local authorities. These 10 commitments provide sustainability goals and methodologies to track their achievement. Hampshire County Council is following this path to greater social and ecological responsibility to much acclaim.	Join the growing movement of leading local government across Europe and sign-up to the Aalborg Commitments. This would help facilitate the kind of culture change within local governance that is required.	Initially the CO2 savings would be modest but grow significantly as the methodology becomes embedded and the culture of local governance evolves. Potentially huge CO2 emission reduction plus numerous other benefits over the coming years.
Visionary Planning: A Grassroots Community Initiative	4	The Transition Towns movement is a grass roots community led initiative to envisage life in a post fossil fuel world, and work towards making that vision a reality. Totnes, Forest Row and many other communities in the UK and elsewhere are developing "Energy Descent Action Plans" in order to think about and plan a future that uses less energy.	Work on practical CO2 reducing initiatives with the growing number of community groups across the County of Herefordshire who are linking into a network called "Herefordshire in Transition Alliance"	Community involvement is important to many aspects of CO2 reduction, and the Transition Movement provides the Council with a partnership shows how various groups can work effectively together. Through New Leaf a good start has been made in this regard.
Sign-up with 350.org for international action on 10/10/10	5	A global day of action on Climate Change is planned for 10/10/10, organised by 350.org. People worldwide are planning to carry out practical projects to reduce CO2, such as by putting solar panels on their school roofs in a grass-roots community led initiative. With support from Councils much more can be achieved.	Offer support to groups and individuals proposing projects. The work will be on-going over decades but the single day is a way of gaining worldwide media coverage and to express the desire for change.	The single day is a way to kick-start a process of change in how we generate power, live, work and travel. One day will not result in massive CO2 savings but projects started this year and using this single day as a launch-pad might.
Integrating CO2 reduction & sustainability into the LDF process	6	Pooran Desai and the Bio-Regional organisation have set "One Planet Living" Standards: 10 Principles. These include, Zero carbon, zero waste, sustainable transport/materials/water/food/habitats, social justice and happiness as principles of economic regeneration.	Make CO2 reduction and One Planet Living Standards a central theme of county strategic documents, including the "Shaping Our Place, Vision to 2026" integration into all sections of the planning process.	Massive savings via good planning. Integrated housing/work/food production etc to minimise transport, laying out street pattern to maximise solar gain, carbon sequestration based agriculture....
Energy: Community Owned Renewables	7	Fintry Development Trust is a community group who own Fintry Wind Turbine, Stirlingshire, Scotland. Community Owned Renewable Energy has multiple benefits & is popular.	Encourage and support community owned renewable energy generation technology including wind turbines, in multiple locations across the County.	As renewables increase old coal power stations will close, with huge CO2 savings. Community ownership has many benefits as the Fintry project demonstrates.
Energy	8	Good Energy is an example of an electricity company selling 100% renewably-generated electricity, from small and large producers.	Ensure that all council buildings, hospitals, schools are signed-up to a supplier like this.	A very quick and easy way for the council to reduce the carbon intensity of the power it uses.
Energy, Transport, Agriculture & Waste Reduction	9	LeAD Leominster's proposed Community Owned Anaerobic Digester, for otherwise waste material, will be a UK first, with great potential multiple benefits.	All possible support should be given to LeAD and other community owned renewables projects. There is great scope for County-wide roll out.	Renewable electricity, hot water for a district heat main, biogas, possibly for a local biogas bus, and soil conditioner; CO2 savings all round. Community Ownership should also create many positive social and economic benefits.
Sewerage, Energy, Transport & Agriculture.	10	Oslo uses heat from the city's sewers to heat 9,000 flats, then puts the sewage through an Anaerobic Digester, using the bio-methane to power 200 buses.	Investigate the use of the heat from the city's sewers and Anaerobic Digester technology to generate hot water for a heat main, bio-fuel for transport or electricity generation.	Somewhat like LeAD but on a much bigger scale. Renewable electricity, hot water, biogas and soil conditioner; CO2 savings all round.
Transport	11	Glúas is a community group in Galway promoting a tram or light rail system for Galway, modelled on Freiburg's trams and transport systems. Trams and light rail are some of the most energy and space efficient forms of transport, especially the new City Class trams under consideration in Galway.	Emphasise walking, cycling and public transport as the best way to ease congestion and lower emissions. Galway is a city only a little bigger than Hereford and a tram system could be the Jewel in the Crown for both cities.	If Galway's model was followed this could be of zero cost to Herefordshire Council, using private and grant funding, and zero carbon traffic solution. Less cars means less congestion, local air pollution and CO2 emissions, and improved quality of life for all.
Transport	12	Hamburg Hydrogen Fuel-cell buses have been in service for a decade or so. The new Mercedes-Benz Citaro hydrogen fuel-cell /ion lithium battery hybrids are claimed to be 50% more fuel efficient, and due to come into service in 2010.	With a range of 155 miles these may be appropriate for a County wide bus network.	Much reduced CO2 and particulate emissions, plus reduced noise. Cutting-edge bus transport. But again, maximum benefits only when fuelled with renewably-generated hydrogen, via renewable electricity.
Transport and Safety	13	"20's Plenty" for lower speed limits in residential areas. Portsmouth has led the way on this, but the movement is spreading. This reduces accidents, increases walking and cycling as safe pleasant options.	Join the "20's Plenty" movement and restrict maximum speeds to 20 mph in residential areas.	Slower traffic means safer streets, so more people choosing to walk or cycle, making for a more pleasant environment and lower CO2 emissions.

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Transport	14	Car Share Clubs. Colwall in Herefordshire provides an example of what can be done by community led initiatives.	Help promote such groups, including the County-wide car share programme – Twoshare.	Initially savings of CO2 would be small, but as the schemes grow and gradually convert their fleets to renewably-generated fuels then the savings become significant. Also savings in terms of air quality/congestion/street parking space.
Transport	15	Efficient, renewably-generated fuel cars. 2 good examples: Riversimple hydrogen fuel-cell, Think ion lithium battery car.	Work with business to provide support, such as electric plug-in points and hydrogen stations.	Initially the savings will be small. Bigger gains will be dependant on increases in renewably-generated electricity.
Existing Buildings	16	Bishops Castle Home Energy Service HES, winners of the Big Green Challenge in Jan 2010. Survey buildings, saving heating bills and CO2 while building community.	Already operating in Herefordshire to small extent. Huge scope for a County wide roll-out of house energy surveys undertaken by trained volunteers	HES states: over 1,000 households are saving an average of 29% off carbon emissions and £380 off fuel bills per home per year.
New Building	19	BedZED (Beddington Zero Emissions Urban Development project) was developed by Bio-Regional and completed in 2002. It is an example of good energy saving design for a development of 100 houses and flats, plus some workshops and offices.	Encouraging developers to meet these standards and add additional features such as AECB Gold, Combined Heat and Power systems, District Heating incorporating Solar Interseasonal Heat Storage etc: could achieve remarkable results and improve on the original BedZED development.	This kind of integrated urban development offers great scope for CO2 reductions. On the video clip it is claimed that BedZED residents have 56% lower than average carbon footprints. This could be improved upon with latest materials and learning.
Built Environment	20	The Passive House Movement started in Darmstadt, Germany, in 1988 and has now grown in many countries. Association of Environmentally Conscious Builders (AECB) is a UK organisation setting high standards. Its' Gold Standard is the best. These are examples of organisations trying to raise the thermal efficiency of housing, so saving energy and CO2.	Make these the standards for all new buildings in the County. Every new building presents a tremendous opportunity to massively raise standards.	Massive savings in CO2, fuel bills and fuel poverty are achievable. Huge opportunities for training and job creation. Multiple benefits and probably the best return on investment in terms of CO2 reduction.
Built Environment	21	District Heating has been the norm in Denmark for about 80 years. Friedrichshafen in Germany and Marstal in Denmark, have solar powered district heating with interseasonal heat stores to save the summers heat for winter use. This type of system is now spreading in Germany & Scandinavia.	District heating, often incorporating combined heat and power systems, is much more efficient than each house having to have separate boilers. Plan new housing developments in Herefordshire around such technology.	Combining a district heating system including a solar interseasonal heat store with the highest insulation and thermal efficiency standards (above) would really be an example of global best practice. Huge CO2 and fuel poverty reductions.
Built Environment	22	Novacem / Calera Cements offer the possibility of carbon sequestration in buildings, and so carbon negative buildings.	Join early trials and commercial roll-out.	Perhaps a few years off, but with great potential to sequester CO2 in buildings. Replaces concrete which is responsible for high CO2 emissions.
Farming, social action, health & education	23	Will Allen, Growing Power, Milwaukee, USA Community Supported Agriculture on a big and transformative scale. Dozens of full time staff and thousands of volunteers and visitors. Wonderful social and economic gains.	Set land aside in Hereford City and in all the County's Market Towns as near as possible to where people live to grow food in ecologically restorative and socially transformative ways.	Multiple Benefits. Local organic food replaces distant supplies thus reducing CO2 and improving food security and health. Growing Power in Milwaukee has seen falling crime and anti-social behaviour and rising social inclusion and educational achievement as a direct result of their work.
Farming & Soil Based Carbon Sequestration.	24	Joel Salatin Polyface Farm Pasture-fed multi-species livestock farming sequesters carbon, adds to soil fertility, while training apprentices and creating green jobs. By selling directly to the public farm profitability is good allowing further investment in good practice. Graham Harvey's book "The Carbon Fields" popularised this technique.	Encourage and assist farmers wanting to change Herefordshire Farmers are in many cases in difficult times, tied into farming in ways that are ecologically, economically and socially unsustainable. Joel Salatin offers an alternative vision of livestock farming.	Carbon Sequestration through photosynthesis and long term storage in soils will be a big future industry while also hugely improving fertility. Livestock farmers have a key role to play. Agricultural grants may in future be dependent upon CO2 sequestration.
Food, Farming & Education.	25	Soil Association "Food for Life" programme is getting schools to sign-up to use 75% non-processed food, 50% local food and 30% organic. Improves diet, local economy, food education while lowering carbon emissions.	Encourage all schools in the County to sign-up to this, and then extend it to other sectors such as hospital and council caterers. Orleton school is already leading the way in the County.	By lowering food miles, processing and packaging, and by converting to organics there will be small but cumulative CO2 savings, as well as diet, health and economic benefits.
Soil based carbon sequestration/	26	Biochar. Ancient system for improving soils which also sequesters carbon. The international Biochar Institute, University of New South Wales, Australia, and many others are developing this carbon sequestration and soil fertility technology.	Herefordshire is an agricultural landscape with many woodlands, which coupled with the best pyrolysis technology, research and development and investment has the potential to start new businesses, create green jobs and sequester carbon.	Another form of photosynthesis based carbon sequestration. Probably a huge potential, but needs R&D; an industry in early stages of development which Herefordshire based businesses might well get in on the early action.
Business	27	Rocky Mountain Institute Founded in 1982 by Amory & Hunter Lovins with the goal of creating an efficiency revolution in how humanity uses energy. Much ground breaking work since with many industries and partner organisations	Investigate how we can join the energy efficiency revolution, in transport, buildings, energy generation and in the commercial sector. Attracting leading edge businesses will open up many new economic opportunities and save carbon.	Efficiency gains are in many circumstances the best way to cut carbon in a cost effective way. The Rocky Mountain Institute shows what can be done.
Business & Industry	28	Yu Qun mayor of Baoding in China has shown tremendous leadership in making his city a renewable energy hub. It is now often cited as the world's first carbon negative city. Simultaneously it has seen great economic growth.	Follow Yu Qun's lead and attract renewable energy equipment companies. Renewable energy equipment manufacture is one of the fastest growing industries in the world.	CO2 reduction requires this shift to renewables and efficiency. If managed well there exist multiple benefits.
Education & Inspiration	29	In 1977 Ibrahim Abouleish established Sekem, a farm in the Egyptian Desert. The farm has diversified, starting numerous businesses, educational projects and satellite farms. This year Sekem launches Heliopolis University specializing in Organic Agriculture, Sustainable Engineering, Economics and Pharmacy.	Could an organic, ecologically restorative farming initiative with big social and economic aspirations like Sekem or Growing Power in Milwaukee provide a model for a new form of higher education provision in Herefordshire?	Initially little direct CO2 savings but with vast potential in the longer term if the project developed to its true potential.
Community Creativity	30	We all have a part to play and I would like each person reading this to think of one inspirational example of something that reduces CO2 while having multiple other benefits.	Through New Leaf these ideas could be fed into an ongoing research and action process for Herefordshire stakeholders to engage with.	Who knows what might be achieved with many minds working on a common problem! The Internet and Wikipedia are good examples.