



Renewable Energy In Devon Newsletter – Issue 21 – November 2009

Wave Hub construction underway

Construction starts this month on the pioneering Wave Hub project that will put South West England at the forefront of the global marine energy industry.

The South West RDA (Regional Development Agency), which is developing Wave Hub 10 miles off the north coast of Cornwall, said its contractors would start work on 16 November.

Wave Hub is a cornerstone of the RDA's strategy to develop a world class marine energy industry in the South West. It is a large grid-connected socket on the seabed for wave energy devices to be tested on a scale not seen before.

The £42 million project is fully funded, has planning approval and will be operational next year. It has already signed up its first wave device developer.

Stephen Peacock, Executive Director of Enterprise and Innovation at the South West RDA, said: "This milestone is the culmination of more than six years' work by the RDA and its partners and will catapult South West England and the UK to the forefront of wave energy development. Our aim is to create an entirely new low carbon industry in the South West and hundreds of quality jobs."

Wave Hub is being funded with £12.5 million from the South West RDA, £20 million from the European Regional Development Fund Convergence Programme and £9.5 million from the UK government.

In July, South West England was designated the UK's first Low Carbon Economic Area because of its strength in marine energy, attracting a further £10 million of UK government investment for projects that will support the industry.

With government, RDA and European funding, the total investment in the South West's marine energy programme in the next two years is expected to top £100 million.

Energy and Climate Change Minister, Lord Hunt, welcomed the start of work on Wave Hub: "Clean green renewable energy is a central component of our response to climate change and ensuring future energy supplies. The scope for wave and tidal energy around the UK's shores is massive and the Wave Hub will help marine energy developers test their cutting edge projects and help them reach commercial viability.

"The South West is the UK's first Low Carbon Economic Area, building on its regional business opportunities and skills. The combination of its wealth of natural marine resource and its high level of expertise in marine technology makes it an ideal location for the Wave Hub."

Carleen Kelemen, director of the Convergence Partnership Office for Cornwall and the Isles of Scilly, said: "Global climate change is both a set of challenges and a real opportunity for new economic development. This ERDF Convergence investment in the Wave Hub is part of a suite of investments in environmental goods and services through new research and innovation, skills and business development being made by the Convergence programmes for Cornwall and the Isles of Scilly as we prepare for the new economy."

The first phase of construction will be on shore. Civil engineers Dean & Dyball have been appointed to drill a 200 metre duct under and through sand dunes on the beach at Hayle in Cornwall between now and the end of the year.

The narrow duct will be lined with a pipe as it is drilled and will eventually link Wave Hub's subsea cable with a new electricity sub-station on the site of a former power station. Work on the sub-station will start in January and is expected to take six months to complete. Wave Hub will be deployed and the subsea cable laid in the summer of next year.

The South West RDA has also announced the appointment of Guy Lavender as General Manager for the Wave Hub project.

After a comprehensive recruitment process Mr Lavender - who currently works at the RDA as Director for the 2012 Olympic and Paralympic Games - emerged as the best candidate from a strong field.

Guy will join Nick Harrington and the rest of the Wave Hub delivery team from January of next year as the remaining installation contracts are awarded and construction begins, and he will be responsible for leading the safe and efficient operation of Wave Hub.

RDA Website 17 November 2009

STEM Club, Energy Initiatives Feedback & Ministerial Visit

We are pleased to report that Okehampton College's electricity bill for September is down by 48% compared to September 2008. This is the result of more careful use, solar PV and more efficient T5 lighting coupled with a better buy in rate. If they can repeat this each month they can expect to save around £28,000 on electricity bills this year.

Okehampton College wish to thank the following for their invaluable sponsorship:

The **STEM** club – for their unrelenting support in the drive to eliminate waste. Each week after school this group of dedicated students places a green (no energy being wasted) or red (things left on) face in each room to encourage staff to switch off unnecessary items. They are please to report 83% green faces over the last 4 weeks.

The Oxenham Building Consultancy - based in South Tawton this company has helped Okehampton College and their primary partners with planning permission and many other building consultancy matters on a voluntary basis. They are very grateful for their continued help and support that is helping them to achieve so much.

EDF Green Energy Fund – provided funding for their first phase solar PV project which proved to be the catalyst for the rest of what has happened since.

The Dartmoor Sustainable Development Fund – funding for a solar thermal scheme planned for the canteen.

CSEP (Community Sustainable Energy Programme) – provided funding for the phase 2 solar PV project

Ecotrade International – for donating 3,000 T5 low energy lights that has taken 65,000 Watts off of their lighting load.

DARE (Devon Association For Renewable Energy) – based in North Tawton, Dare has helped Okehampton College with advice and support on energy related matters.

The Next Steps: These will include insulation upgrades and improvements to the heating distribution & zoning. Okehampton College are looking also at the feasibility of wood chip or wood pellet boilers as the source of heat.

Future Renewable Energy Generation Possibilities: They are exploring the feasibility of a small scale wind turbine on Ball Hill and a hydroelectric scheme. There will be a need for community consultation on both these ideas. If you would like to comment at this early stage please contact Keith Webber kwebb@okehamptoncollege.devon.sch.uk

The wind turbine would be placed well away from houses and the hydro scheme would likely be an Archimedes Screw such as the one at the River Dart Country Park.

The various trades, consultants, project managers, architects and engineers involved with the energy efficiency programme have agreed to attend our careers fair to promote opportunities to our students in these growth industries.

Finally, Okehampton College's efforts have attracted ministerial attention and they were visited recently by Richard Benyon, Shadow Environment Cabinet Minister, who came to see first hand their sustainability efforts and The Growing Our Future project. On October 23rd Okehampton College were hosts to the SSAT (Specialist Schools & Academies Trust) who were coming to see what they have been up to.

Castle scoops a top green award . . .

A NATIONAL Trust property near Okehampton walked away with a new green title last week, when it walked away with the Best Renewable Energy System award.

Castle Drogo in Drewsteignton won the award for its biomass boiler at the South West Green Energy Awards ceremony, held on Tuesday, November 10.

The awards, organised by Regen South West, aimed to showcase the very best in technologies and projects, which harness the power of renewable energy sources.

Castle Drogo, which has cut huge running costs since the work on its café, outdoor seating area, toilets and heating system, installed the new boiler earlier this year.

The boiler, which replaced an old oil fired heating system, uses only local woodchip and means the trust no longer needs to use 70,000 litres of oil each year.

Property manager David Bailey said the new boiler has made a big difference. "We are very proud to have won the award. It means all our hard work and effort has been recognised." He said.

Castle Drogo undertook the work after receiving a grant of £100,000 from the Big Lottery Fund earlier this year.

Okehampton Times 19TH November 09

Devon County Council

Regen SW South West Green Energy Award Winner 2009: Most Proactive Local Authority

Devon County Council (DCC) has the aim of "making Devon England's greenest county" in their strategic plan and this is supported by politicians and officers alike. The County Council lead negotiations on behalf of the Devon Strategic Partnership with Government on the Devon Local Area Agreement (LAA). Schemes currently in progress or completed, include: the Ashden Award winning RE4D, the County Hall biomass boiler, their climate change programme-internal and community elements, low/zero carbon schools projects and schools "green challenge fund"

SunGift Solar

Regen SW South West Green Energy Award Winner 2009: Installer of the year

SunGift Solar design and install renewable energy systems, including solar thermal, solar PV, ground and air source heat pumps and biomass systems. They are BRE Microgeneration accredited. SunGift Solar specialize in combining renewable energy systems to provide an environmentally friendly and cost effective way for people to generate their own hot water, central heating and electricity.

www.sungiftsolar.co.uk/

All Homes To Have A Smart Meter by 2020.

The planned introduction of smart meters into UK homes will need strong Government intervention to ensure householders receive the sort of home energy displays they say they need to help them understand and control their energy use.

That's the main conclusion of a recent study carried out by the Centre for Sustainable Energy (CSE) on behalf of the Energy Saving Trust. Its findings have informed the Government's consultation on the roll-out of domestic smart meters.

Currently there are various home electricity displays on the market which show householders how much electricity they are using. However, there has been little published research about what consumers actually want from these displays and what they would find easiest to understand.

CSE's study therefore tested householder perspectives of the sorts of displays they would find useful in their home showing them how much gas and electricity they were using at any given time.

CSE's Senior Researcher Will Anderson, who led the research and compiled the report for the Energy Saving Trust, said: "The research was striking because of the convergence of opinion among our participants. We were able to come up with a clear core specification for home energy displays which addressed all their interests. Yet only one of the models currently on the market comes close to meeting this specification.

"On this basis, and given the scale of the smart meter investment programme and the importance of getting these displays to provide meaningful information for users, it is pretty clear that the Government shouldn't be leaving the provision of smart meters to 'the market'. A national core specification is a must.

"Also, we should not underestimate the value of every household having a comparable device as this will enable learning within neighbourhoods and communities."

As Will said: "Rather than leaving it to the market to give householders 'choice' in smart meters, we think far greater benefits can be achieved by everyone having something in common when it comes to smart meters. Tackling climate change needs some common experiences to bring us together with a sense of collective purpose. The roll out of smart meters provides an opportunity to do just that." *CSE Newsletter September 09*

'Climate change, adapting for tomorrow' and 'Investing for the future'

The Environment Agency has produced a new report 'Climate change, adapting for tomorrow' which shows how they are working, often in partnership with others, to help communities and businesses adapt, while still protecting the natural environment. The report can be found at: www.environment-agency.gov.uk/research/planning/108348.aspx. The agency has also released its long term investment strategy for flood and coastal risk management, 'Investing for the future: Flood and coastal risk management in England', which sets out the scale of the investment needed to meet flood challenges over the next 25 years.

www.environment-agency.gov.uk/research/library/publications/108673.aspx

Implementation Plan for the Regional Woodland and Forestry Framework

The Implementation Plan for the Regional Woodland and Forestry Framework was formally launched by Nick Hoare, Wessex Regional Director of the Confederation for Forest Industries, at the South West Woodland Show on Friday 11th September. The Framework to shape our woods and forests for the future. helps set priorities in shaping our woods and forests for the future and helps to target public investment in the South West. It is available to view and download at www.forestry.gov.uk/southwest-rwff.

Suffering the science - climate change, people and poverty

Oxfam have released this report, which outlines evidence of how climate change is affecting every issue linked to poverty and development from access to food and water to health and security. It warns that without immediate action 50 years of development gains in poor countries will be permanently lost. To read the report go to: www.oxfam.org/en/policy/bp130-suffering-the-science

Renewable energy pioneers angry at Feed-in Tariff proposals

Early adopters of renewable energy may be worse off under the Government's scheme to encourage more people to generate their own electricity, unless it increases the proposed rates of feed-in tariff for existing microgenerators.

The new 'Clean Energy Cashback' proposals are currently under consultation. Whereas new investors in microgeneration will be paid up to 36.5p¹ per kWh of electricity they generate, people who installed their system before the July this year will get just 9p per kWh. Many people will take a cut in income as a result of the government's financial incentive scheme. Calculations done by YouGen find that most people with solar panels will be worse off by up to 70 per year. That's a loss of £1,190 in income over the period of the feed-in tariff. This varies according to which electricity provider they are signed up with. Those currently using Good Energy, Npower of Scottish and Southern will suffer most

"It is strange that a scheme that's meant to encourage people to take up microgeneration will punish those who have lead the way," said Cathy Debenham, founder of YouGen. "These are the people who could act as advocates and encourage take up, but many of them feel let

down and cheated. Despair, disgrace, discrimination, outrage, horrified and illogical are just some of the adjectives in emails sent to me by YouGen users.

“What worries me most is the number of respondents (both microgenerators and installers) who don’t realise the implications of the feed-in proposals. This is why we have launched a campaign to raise awareness of the proposals and to encourage people to respond to the consultation, either directly or by signing the petition at <http://www.yougen.co.uk/equal/>.

The petition calls for all existing microgenerators (with installations of less than 50kW) to receive the same level of Clean Energy Cashback (feed-in tariff) as those who install in the first year of its introduction. This would recognise and reward them for their role in leading the way in carbon reduction, and for the substantial impact they can have in encouraging others to follow suit.

“The majority of the early adopters didn’t do it to make money,” added Cathy Debenham, “although some of the most recent ones have been encouraged by the promise of a feed-in tariff. However, they have been taken aback by the sheer inequality in reward, and understandably those whose installations are now going to take even longer to pay back are particularly unhappy.”

Dual fuel bus running on biogas

Its backers, a consortium led by UEA's Low Carbon Innovation Centre (LCIC) and including Anglian Bus, bus manufacturer Optare plc, and engine conversion specialists Hardstaff Group, say that the new bus will reduce pollutant emissions and greenhouse gas emissions by around a half. It is hoped the technology will be rolled out to bus fleets across the country and further afield.

Project leader Dr Bruce Tofield, of UEA's Low Carbon Innovation Centre, said, "Dual-fuel use is a very attractive option. The vehicle can still run on diesel, providing flexibility, but most of the time is running on biomethane gas which is a much cleaner and less polluting fuel.

"In particular, the cost of conversion of a diesel bus to dual-fuel use is a small fraction of the cost of a new natural gas bus. Conversion to dual-fuel use is potentially a viable option for most if not all diesel buses in the UK and, indeed, across Europe and more widely."

David Pursey, chairman of Anglian Bus, said, "Anglian has always tried to be a leader in environmental matters and worked with UEA to demonstrate the benefits of biodiesel in the Civitas programme. We are really pleased to have the first gas-powered dual-fuel bus in the UK in our fleet and look forward to working with our partners to demonstrate the benefits of dual-fuel operation on biomethane."

Trevor Fletcher, managing director of Hardstaff Group, added, "Hardstaff Group's dual-fuel trucks have covered nearly 40 million kilometres and we are really pleased to be working with UEA's Low Carbon Innovation Centre, with Anglian Bus and with Optare to demonstrate our technology on buses for the first time."

Source: http://www.eurekaalert.org/pub_releases/2009-09/uoea-bfd090809.php#

Mutants good for algal biofuels

The company began fuel production at its pilot plant near Melbourne in Florida in August 2007, and since then a number of tests have proved the feasibility of the company's methods for the production of ASTM standard biofuel.

“Our results prove that large-scale outdoor production of biodiesel from microalgae is entirely within our reach, and that our technology can be optimized and is ready to scale,” said Aurora Biofuels Chief Executive Bob Walsh. “In the near-term we expect to demonstrate that the economics of this process can produce biodiesel that is price-competitive with fossil fuels and our first commercial plant will be in operation by 2012.”

Talking specifically about the high-yield strain of algae used by the firm, Mr Walsh added, “Algae have a built-in mechanism to be effective at low light and as it gets brighter during the day their uptake of carbon dioxide levels off. We’ve been able to go in and alter strains by natural mutation to cause the algae to deal with light across the whole spectrum. The algae continue to uptake CO₂ through brighter light and are more productive.”

The findings have been confirmed by Professor Christopher Benning of Michigan State University, who is a paid member of Aurora's scientific advisory board. “They've proven that

their proprietary strain can increase carbon sequestration and the ability of algae to utilize CO2 and grow higher biomass."

"This is a major breakthrough showing that one can take algae with improved productivity from the research lab to the field. What Aurora scientists have achieved is an impressive milestone on the path to large-scale commercial algae production," added Kris Niyogi, another member of the scientific advisory board and a professor of algal biology at the University of California, Berkeley.

Sources: <http://greeninc.blogs.nytimes.com/2009/08/20/a-new-more-co2-absorbent-algae-strain/>

<http://uk.sys-con.com/node/1075674>

<http://www.aurorabiofuels.com/aurora-biofuels-pilot-plant-produces-biodiesel.php>

Case Study: generating greener home energy

The Government aims to cut UK carbon emissions by 80% from 1990 levels by 2050. Using energy more efficiently in the home will be crucial in meeting this target.

A recent collaborative research and development project, led by Ceres Power with Technology Strategy Board funding, developed a prototype compact fuel cell combined heat and power system designed to provide domestic hot water and heating, as well as electricity. A system based on this technology could reduce CO2 emissions from the typical family home by up to 40%. Under a contract with British Gas, the system is now being taken through to product manufacture and launch in 2011.

To find out more about this visit

<http://www.innovateuk.org/successes/generatinggreenerhomeenergy.ashx>

Prescott wins support for attacking 'NIMBY' councils

Friends of the Earth has expressed its support for comments made by John Prescott in which he attacked NIMBY ("not in my back yard") councils that turn down wind farm applications.

"We have to counteract the nimbys who say they want change, but not in their backyard"

John Prescott

The former deputy Prime Minister said that planning committees should not be allowed to veto critical alternative energy developments on purely aesthetic grounds, and criticised a number of recent decisions to refuse permission for new projects to generate renewable energy.

He was speaking at launch of the Parliamentary Assembly of the Council of Europe's New Deal campaign, which is pushing for a global deal on climate change at the United Nations Climate Change Conference in Copenhagen later this year.

He said: "Two thirds of applications for wind turbines are being turned down by councils. The opposition forces are beginning to develop. We have to counteract the nimbys who say they want change, but not in their backyard".

He added that planning committees in Bedford and the Isle of Wight could be winners of the 'Age of Stupid' awards, named after the environmental film which depicts the Earth devastated by climate change fifty years in the future.

Friends of the Earth's executive director Andy Atkins said that Mr. Prescott was right to be concerned as Britain would struggle to meet its targets for lowering emissions and generating energy from renewable sources without a change in planning attitudes towards projects such as wind farms.

Gaynor Hartnall, director of policy at trade representatives the Renewable Energy Association (REA), added that the planning system had been on the REA's agenda for a while, especially for smaller, local schemes.

She said: "It is a notoriously drawn out process and that is a terrible concern. We should be striving for efficiency in decisions on the huge number of smaller renewables projects coming forward."

Mr. Atkins agreed that more should be done on a local scale, saying that local authorities should have obligatory renewable energy targets and a requirement to allocate potential local sites to build appropriate green energy developments in order to meet these targets.

He said: "A major emphasis on community-led renewable energy developments is also required so that local people can share in the huge financial benefits of developing green power."

E.ON submits planning application for one of the UK's largest biomass-fired power plants

E.ON has submitted a planning application to the Department of Energy and Climate Change for a 150MW biomass-fired energy plant at the Royal Portbury Dock in North Somerset.

If granted planning consent, the new development could produce enough power for around 200,000 homes by burning carbon neutral fuels such as wood.

Dave Rogers, regional director for E.ON's renewables business, said: "This project - and biomass generally - has a vital role to play in the UK's future energy mix as we look to produce affordable, secure and lower carbon energy for generations to come.

"This scheme alone will displace more than 450,000 tonnes of carbon dioxide every year, which is the equivalent of taking around 150,000 cars off UK roads.

"The development will also make a significant contribution toward meeting the Government's renewable energy targets."

If the project gets the green light, construction is expected to begin in 2010 and to be fully operational as early as 2013.

E.ON already owns and operates the 44MW Steven's Croft project, which is currently one of the UK's largest biomass plants.

The company is also committed to reducing the carbon intensity of its emissions across Europe by 50% by 2030. In order to achieve this goal, the company is investing billions of pounds in renewable energy projects, including the London Array which was given the green light earlier this year, with partners DONG Energy and Masdar.

Combined, E.ON's renewable portfolio generates enough green energy to supply the homes in a city, the size of Manchester. It also has enough renewable projects in development within the UK to power the equivalent of one million homes and displace the emission of two million tonnes of carbon dioxide every year.

Full-scale floating wind turbine installed

A floating 2.3 MW wind turbine, weighing 5,300 tonnes, has been installed by StatoilHydro under their 'Hywind' pilot scheme. The turbine is installed on a floating steel cylinder, filled with water and rocks, which extends 100m beneath the surface and is attached to the seabed. The turbine will be tested over the next two years to see how it is affected by wind and wave. If successful, this pilot scheme could enable floating turbines to be installed in water depths of 120-700m, which are deeper waters than those of Round 3 installations.

New Energy Focus, 09 September 2009

"Island" Grid Systems

Micro grids are a ground-breaking way of enabling communities to take control of their energy use and reduce their carbon footprint. At CAT (Centre for Alternative Energy), wind, hydro and PV energy work together with an intelligent control system to connect and disconnect to the national grid whenever they need to. The system, also known as island generation is the first of its kind in the UK.

The developed world's centralised electricity system wastes around 65% of energy through heat loss in power stations and transmission lines, before reaching our homes. The electricity sector in EU is responsible for releasing more than 1.2 billion tonnes of carbon dioxide and over 2600 tonnes of dangerous radioactive waste every year. The EU also has a limited security of supply of fossil fuel resources with only 0.6% of the oil, 2% of the gas, 7.3% of the coal. Furthermore more than half of Europe's power plants are at least 20 years old, and will need to be replaced over the next decade.

Jase Kuriakose engineer for the micro grid project says *"There is a vital need and enormous opportunity to move towards a more sustainable decentralised system, which protects the climate and provides future generations with secure energy."*

For the last 35 years, CAT has been striving to find practical sustainable solutions to some of the key environmental questions we face. The island grid system is one of many different projects at CAT which are working towards a zero carbon future.

South West electrical specialists win £1 million wave hub contract

The pioneering Wave Hub project has moved another step closer after a £1 million contract was placed for electrical equipment installation and commissioning to link the wave energy project to be built next year off the coast of Cornwall with the National Grid.

Work will be carried out by Poole-based Powermann Ltd after it won a European-wide tender process to supply and install onshore electrical equipment. The company specialises in high voltage power station and sub-station projects and employs 75 people in Dorset.

The Wave Hub project is being spearheaded by the South West RDA (Regional Development Agency) and will create a giant grid-connected electrical socket on the seabed off the coast of Cornwall to enable wave energy devices to be tested on a scale not seen before.

Earlier this month the Government announced that South West England will become a world centre for wave and tidal energy after the region was designated the UK's first Low Carbon Economic Area because of its strength in marine energy. The Government is investing £9.5 million in Wave Hub and a further £10 million to support other marine energy projects in the South West. The total Wave Hub project is now valued at £42 million, with funding also secured from the ERDF (European Regional Development Fund) Convergence Programme (£20m) and the RDA (£12.5m).

Nick Harrington, Head of Marine Energy at the South West RDA said: "We are delighted to have Powermann on board to deliver the onshore electrical package for Wave Hub. Now that we have reached the stage of awarding contracts to suppliers the project is really taking off and we look forward to shortly starting the recruitment for a Wave Hub general manager, who will lead the operation of Wave Hub."

With planning consent, funding and its first wave energy device developer (Ocean Power Technologies) now all in place, installation work on Wave Hub is likely to start in summer 2010, with the first wave energy devices expected to be deployed in 2011.

The RDA has already placed its first equipment order with JDR Cable Systems Ltd to manufacture the cable and hub assembly for Wave Hub in a contract worth £7.6 million. The latest contract award to Powermann includes the supply of transformer, electrical switchgear and other high-voltage equipment.

Nigel Ritchie-Lilley, Engineering Manager for Powermann, said: "Over the past 12 months we've seen a significant growth in our work within the renewable energy sector and we are very excited about working on our first wave energy project. As a South West based business we're pleased to be playing a role in such a ground breaking project that will put the region on the world stage for the development of wave energy devices."

Davidstow wind farm application deferred to strategic planning authority

The application for a wind farm at Davidstow, on Bodmin Moor, Cornwall, has been deferred by councillors to the strategic planning authority with the suggestion that the committee reject it. The 20-turbine wind farm would provide enough electricity for around 30,000 homes.

Copenhagen climate change talks are last chance, says Gordon Brown

Gordon Brown today warned that the world is on the brink of a "catastrophic" future of killer heatwaves, floods and droughts unless governments speed up negotiations on climate change before vital talks in Copenhagen in December.

This applies to the US as much as anyone, he said, adding that "there is no plan B", and that agreement cannot be deferred beyond the UN-sponsored Copenhagen conference.

There are fears that Barack Obama does not have the political capital to reach a deal in Copenhagen and will instead use a visit to China next month to reach a bilateral deal that circumvents the UN.

Downing Street is also concerned that there is no agreement on how to finance a climate change package in developing countries.

The prime minister delivered his warning to a meeting of environment ministers brought together under the umbrella of the Major Economies Forum. The 17 countries in the forum are responsible for 80% of greenhouse gas emissions.

Brown told them: "In every era there are only one or two moments when nations come together and reach agreements that make history, because they change the course of history. Copenhagen must be such a time."

"If we do not reach a deal at this time, let us be in no doubt: once the damage from unchecked emissions growth is done, no retrospective global agreement in some future period can undo that choice. By then it will be irretrievably too late."

Brown said that, according to estimates from the intergovernmental panel on climate change, an extra 1.8bn people – a quarter of the world's population – could be short of water by 2080 as a result of climate change.

And the threat was not confined to people in the developing world, Brown said.

"The extraordinary summer heatwave of 2003 in Europe resulted in over 35,000 extra deaths. On current trends, such an event could become quite routine in Britain in just a few decades' time," he said.

"And within the lifetime of our children and grandchildren the intense temperatures of 2003 could become the average temperature experienced throughout much of Europe. In Britain we face the prospect of more frequent droughts and a rising wave of floods."

Brown said that he thought a deal at Copenhagen was possible. But negotiators were "not getting to agreement quickly enough", Brown went on, which was why he was appealing for leaders to get involved personally.

"We cannot compromise with the earth, we cannot compromise with the catastrophe of unchecked climate change, so we must compromise with one another," he said.

"I urge my fellow leaders to work together to reach agreement amongst us, recognising both our common and our differentiated responsibilities – and the dire consequences of failure."

Ed Miliband, the climate change secretary, yesterday highlighted signs of movement, pointing out that last month India said it was ready to set itself non-binding targets for cutting carbon emissions, while China said it would curb the growth of its emissions by a "notable margin" by 2020, although it did not specify further.

The US special envoy for climate change, Todd Stern, said developing economies must boost their efforts to curb emissions, warning it was "certainly possible" that no deal would be agreed in Copenhagen. "What we need to have happen is for China and India and Brazil and South Africa and others to be willing to take what they're doing, boost it up some, and then be willing to put it into an international agreement," he said.

The Guardian 19th October 09

Climate map shows impacts if we fail to limit dangerous climate change

A new map illustrating the global consequences of failing to keep climate change to under 2 degrees Celsius was launched today by the UK Government.

The map – launched at the Science Museum by Foreign Secretary, David Miliband, Climate and Energy Secretary Ed Miliband, along with the UK's Chief Scientist, Professor John Beddington, was developed using the latest peer-reviewed science from the Met Office Hadley Centre and other leading impact scientists. The poster highlights some of the impacts that may occur if the global average temperature rises by 4 degrees Celsius above the pre-industrial climate average.

Ahead of December's international climate change talks in Copenhagen, the Government is aiming for an agreement that limits climate change as far as possible to 2 degrees Celsius. Increases of more than 2 degrees will have huge impacts on the world.

The poster shows: that a 4 degree average rise will not be spread uniformly across the globe. The land will heat up more quickly than the sea, and high latitudes, particularly the Arctic, will have larger temperature increases.

The average land temperature will be 5.5 degrees above pre-industrial levels.

The impacts on human activity shown on the map are only a selection of those that may occur, and highlight the severe effects on water availability, agricultural productivity, extreme temperatures and drought, the risk of forest fire and sea level rise.

Agricultural yields are expected to decrease for all major cereal crops in all major regions of production. Half of all Himalayan glaciers will be significantly reduced by 2050, leading to 23% of the population of China being deprived of the vital dry season glacial melt water source. The Foreign Secretary, David Miliband said, "We cannot cope with a 4 degree world. This map clearly illustrates the scale of the challenge facing us today - climate change is a truly global problem that needs a global solution and it is a solution we have within our grasp. But to tackle the problem of climate change, all of us - foreign ministries, environment ministries, treasuries, departments of defence and all parts of government and societies - must work together to keep global temperatures to 2 degrees. It is only by doing this that we can minimise the huge security risks presented by a future 4 degree world."

Ed Miliband, Energy and Climate Change Secretary said, "This map shows that the stakes couldn't be any higher at the Copenhagen talks in December. Britain's scientists have helped to illustrate the catastrophic effects that will result if the world fails to limit the global temperature rise to 2 degrees. The UK's going all out to persuade the world of the need to raise its ambitions so we get a deal that protects us from a 4 degree world."

Professor John Beddington, the UK Government's Chief Scientist said, "This map developed by the Met Office Hadley Centre, based on the latest climate modelling and peer reviewed science, shows a truly frightening picture of a possible future world in which mankind has failed to act on climate change. It is a world we must do all we can to avoid. A 4degC rise globally would mean temperature rises far higher than 4degC in many countries and regions, with potentially devastating impacts for people across the planet."

Vicky Pope, Head of Climate Change Advice at the Met Office said, "If emissions continue at the current rate the global average temperature are likely to rise by 4 degrees Celsius by the end of this century or even substantially earlier. The science tells us that this will have severe and widespread impacts in all parts of the world, so we need to take action now to reduce emissions to avoid water and food shortages in the future."

Prof. Chris Rapley CBE, Director of the Science Museum and Professor of Climate Science at University College London said, "The map provides graphic evidence of the dramatic transformation of our world that a 4 degree global temperature rise would trigger. It leaves no doubt of the paramount importance of a successful outcome of the Copenhagen negotiations."

DECC 22 October 2009

Parliament votes against 10:10 commitment – Thurs, 22nd Oct 2009

A Liberal Democrat move to get the Houses of Parliament signed up to cut its carbon emissions by 10% by 2010 failed to win over the majority of MPs. The special opposition day debate on October 21st attempted to sign up Parliament to the 10:10 commitment. However, after a debate, the majority of MPs in a very tight vote went 297 against to 226 for - rejecting the plan.

Plans have been put in place to develop what has been hailed as the UK's first commercial-scale geothermal power plant which will supply 10MW of base load electricity to the National Grid and up to 55MW of renewable heat for local use.

Geothermal Engineering Ltd - a privately-owned British company specialising in the proving and development of geothermal resources - outlined plans for the project near Redruth in Cornwall on October 12 and, subject to planning permission, the start date for drilling will be mid 2010, with the plant set to be commercially operational by 2013.

These plans came after the Eden Project spoke in June at the House of Lords of hopes to build a geothermal plant that would generate 3MW of power and "several" megawatts of heat energy

Over the coming months, Geothermal Engineering Ltd will be consulting with the local community, council and universities on their preferred options for using the renewable heat. Geothermal heat is often used as a source for low cost heating, agriculture, industry and to provide cooling to high tech businesses.

Ryan Law, MD of Geothermal Engineering Ltd, said: "Geothermal energy has been in use for millennia, even in the UK where the Romans used it for bathing.

"Modern technology allows us to target deeper, hotter geothermal resources to provide a sustainable source of electricity and heat. Our vision is to provide renewable power in the UK at minimal environmental cost," he added.

Conservative leader David Cameron visited Cornwall in May this year to find out about the potential for so-called "heat mining", which experts believe could offer 10% of the country's energy needs

Geothermal systems use the Earth's natural heat as a sustainable power source. Wells will be drilled to approximately 5 km where temperatures are expected to exceed 170 degrees centigrade. Water will be pumped down into the rock where it is naturally heated, before being pumped back to the surface as hot water or steam.

The heated water will be used to power turbines to generate electricity and as the source of renewable heat. Geothermal Engineering Ltd chose Cornwall to develop the plant as previous research proved that Cornwall has a suitable heat resource which is trapped in granite underground.

Over the next 20 years, Geothermal Engineering Ltd plans to deliver up to 300 MW of clean, sustainable electricity and up to 1 GW of renewable heat for communities across the South West of the UK.

Geothermal energy is already being used in countries including America, Germany, Australia, New Zealand and Iceland.

The total global installed geothermal electricity capacity is approximately 10 GW.

New Energy Focus 21st October

Go-ahead for 10 nuclear stations

The government has approved 10 sites in England and Wales for new nuclear power stations, most of them in locations where there are already plants. It has rejected only one proposed site - in Dungeness, Kent - as being unsuitable on environmental grounds. A new planning commission will make decisions on the proposals "within a year" of receiving them, Energy Secretary Ed Miliband told MPs. Nuclear was a "proven and reliable" energy source, he said.

But environmental campaigners say it is an expensive and dirty option and the government could be open to legal challenges. The 10 sites deemed suitable for future nuclear plants are: Bradwell in Essex, Braystones, Kirksanton and Sellafield in Cumbria, Hartlepool, Heysham in Lancashire, Hinkley Point in Somerset, Oldbury in Gloucestershire, Sizewell in Suffolk and Wylfa in North Wales. Seven of the proposed locations are already home to nuclear plants while Bradwell was home to one in the past. Braystones and Kirksanton are the only new sites under consideration. Dungeness was rejected because of worries about the threat to the local eco-system from coastal erosion and flooding should a new plant be constructed there. Ministers hope to fast-track the construction of the new plants so that some can be producing energy by as early as 2018. Mr Miliband said the new Infrastructure Planning Commission would have to make a decision on each application within a year of receiving it, to avoid a repeat of previous lengthy inquiries.

However, he insisted that people living close to the proposed sites would have plenty of opportunities to make their views known. The government decided last year to go ahead with a new generation of nuclear plants, lifting a previous moratorium on expansion.

The majority of the UK's ageing nuclear infrastructure will have to be decommissioned by 2023, leading some experts to warn of the prospect of power shortages if capacity is not added. Plans for any plants in Scotland, which has two existing sites, are opposed by the SNP government.

Mr Miliband said nuclear was one of a "trinity" of future fuel options, alongside renewables and clean coal, which would help to secure the UK's energy security and reduce its dependence on imported gas.

Clean coal technology aims to trap and store CO₂ emissions from coal plants underground, cutting pollution levels. However, it remains commercially unproven.

"We need all of them in the long term because of the challenge of the low-carbon future is so significant," he said.

Most people living close to power plants were "enthusiastic" about them and the developments would create 9,000 jobs, Mr Miliband added. At the same time, he said the UK needed to do more to meet its renewables targets with more onshore and offshore wind farms. The Conservatives backed the expansion of nuclear power but warned that time was running out to prevent a "black hole" in energy supplies.

"Every one of the measures contained in this statement should have been brought forward 10 years ago when they had the chance to secure the investments that are so desperately needed to keep the lights on, keep prices down and cut carbon emissions," said shadow climate change and energy secretary Greg Clark.

The Liberal Democrats said residents near proposed sites risked being excluded from decision-making, saying what was "being disposed of is not nuclear waste but the democratic process".

Greenpeace said the "figures did not add up" for new nuclear plants to be built without public subsidies. "You can't justify building more nuclear power stations when there is no solution to radioactive waste and when international regulators are saying there are huge uncertainties surrounding the basic safety of new reactor designs," said the organisation's Ben Ayliffe.

The World Development Movement said a separate government decision not to rule out building coal-fired plants in the future would "shatter" the UK's credibility in future climate change talks.

But employers' organisation the CBI welcomed the announcements, saying: "These planning statements will help reassure companies that the government has a clear strategy for delivering new nuclear power, clean coal and renewable energy plants, and that this will be reflected in planning decisions."

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