

Gridline

The magazine for
National Grid grantors
Spring 2010

nationalgrid
The power of action.™

Green gas

The Cheshire grantor
turning waste into energy

Back on track

National Grid restores heritage
railway bridge

Nature's way

Profile of Linking
Environment And Farming



Hooked on safety

New signage keeps anglers aware of hazards

Also in this issue: project round-up, Marks Hall Gardens and Arboretum, win a balloon flight

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NATIONAL GRID'S LAND AND DEVELOPMENT GROUP

is responsible for acquiring all rights and permissions from statutory authorities and landowners needed to install, operate and maintain National Grid's electricity and gas transmission networks. The Group acts as the main interface for landowners who have gas and electricity equipment installed on their land. Listed below are your local Land and Development team contacts.

ELECTRICITY AND GAS

- North west and Scotland 0161 776 0706
- South east 01268 642 091
- South west 01452 316 059
- East 0113 290 8235.

WAYLEAVE PAYMENTS

- For information on wayleave payments, telephone the payments helpline on 0800 389 5113.

ELECTRICITY EMERGENCY

- Emergency calls to report pylon damage to National

Grid can be made on 0800 404 090. Note the tower's number – found just below the property plate – to help crews locate it.

ELECTRIC AND MAGNETIC FIELDS

- For information on electric and magnetic fields, call the EMF information line on 08457 023 270 (local call rate). Website: www.emfs.info.

GAS EMERGENCY

- 0800 111 999.



CONGRATULATIONS TO JULIE HUBBARD, GRIDLINE'S PHOTO COMPETITION WINNER (DETAILS PAGE 20)

LIGHTNING STRIKES TWICE FOR DEVON GRANTORS

Congratulations to Liz and David Moore of Cleave Farm, near Bideford, Devon, the winners of the Sony digital camera competition in the last issue of Gridline.

It's the second time the couple have been picked out of the hat in less than 12 months.

David and Liz run a dairy farm with 500 cows and also devote some of their land to producing feed for the herd.

"Last year we were lucky enough to win a Sony Handycam in the Gridline competition, which we gave to our grandson, and I'm looking forward to using the digital camera to enter the photo competition," said Liz.

GET IN TOUCH

Please contact Gridline if:

- You have any news which you think would be of interest to other grantors
- You think that your business or hobby would make a good article
- You have any suggestions for topics you would like to see covered in Gridline.

Gridline is produced by Summersault Communications, 23-25 Waterloo Place, Leamington Spa, Warwickshire CV32 5LA. To contact Gridline you can either phone 01926 656 325, email gridline@uk.ngrid.com or write to the above address.

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I'm Angela Ford and it's a particular pleasure to greet you for the first time as the new editor of Gridline. It's been a busy few months for me, getting to know the job, journeying round the country to meet the team and working on a number of projects – including our county show programme, which you can find out more about on page 4.

I know many of you look forward to reading Gridline and over the coming months we are introducing a number of new

features, which we hope will increase your enjoyment of the magazine still further. Starting from this issue, for example, we've got four pages of news, enabling us to include more of your stories, and preview more events.

Our feature on page 10 looks at how a technology called anaerobic digestion (AD) could help the UK to reduce the amount of waste sent to landfill – and the greenhouse gases which are emitted – while at the same time meeting renewable energy targets.

See page 12 to learn about grantor Phil Pearson, who is using an AD plant to process green waste from his tomato growing business. The process has a number of useful outputs, such as CO₂, which is recycled to the glasshouses to boost the crop, and biogas, which can be burned in a Combined Heat and Power unit to produce electricity.

The grantor profile on page 8 focuses on Marks Hall estate in Essex. In a derelict condition after World War Two, a fascinating new garden area and an arboretum have now been created for visitors to explore.

On page 16 we visit an angling club in Cheshire, where the grantor has worked with his local lands officer to heighten awareness about the potential dangers of coming into contact with the overhead power lines that cross the fishing lakes.

Turn to page 18 for our profile on Linking Environment And Farming (LEAF) – a national charity that highlights to the public the vital role that farmers play in producing wholesome food. Many National Grid grantors are LEAF members and we are proud to be one of LEAF's corporate sponsors.

Finally, turn to page 20 to win an opportunity to take to the skies with Virgin Balloon Flights or to win a fantastic Sony digital camera.

Editor, Gridline

Grantor wins farming's top award

Leicestershire gas grantor Nick Padwick has been named the UK's Farmer of the Year in a prestigious national competition, organised by Farmers Weekly magazine.

Nick, who manages The Co-operative Farms' 4,500-acre Stoughton Estate, near Leicester, emerged as the overall winner from a shortlist of 16 category winners. In addition to managing the estate, he established the highly successful From

Farm to Fork education initiative, which brings food and farming to life for primary school children.

The programme began when Nick and his wife Michelle invited local schoolchildren to see how cereal crops were produced on the farm. Since then, the scheme has expanded to seven other farms, all owned or operated by The Co-operative Farms, and more than 20,000 children have enjoyed farm visits.



AWARD: Nick Padwick (second from right) collecting his award from (left to right) Jane King, editor of Farmers Weekly, Hilary Benn MP and TV presenter and awards compère Julia Bradbury

Announcing this year's county shows

Grantors attending five major county shows this summer will once again receive a very warm welcome from National Grid.

Selected grantors will receive a free show pass and an invitation to join National Grid for lunch. Inevitably, the number of guests that can be accommodated in the marquee is restricted, so invitations are limited.

Outside the busy lunch period all grantors are welcome to enjoy refreshments in the marquee.

At the Royal Welsh Show, for the first time in recent years, the marquee will also be open to the general public on all four days of the event, enabling visitors to find out more about National Grid and its commitment to the environment and the communities in which it works.

JOIN NATIONAL GRID AT:

10-12 June, Royal

Cornwall Show

22-23 June, Cheshire Show

23-24 June, Lincolnshire Show

24-27 June, Royal Highland Show

19-22 July, Royal Welsh Show



Engineering the future

Volunteer engineers from National Grid and the South West Electricity Alliance, who are working on a project to build a new substation in Felindre, South Wales, are helping youngsters at Llangyfelach Primary School, Swansea, to explore the exciting world of engineering.

The Imagineering Club, which operates after school hours, presents a weekly opportunity for Year 5 and 6 pupils to get an insight into the world of engineering and technology that may inspire their future career choices.

"These kids are the engineers of the future," said Steve Self, National Grid and Electricity Alliance development manager for the South West Alliance. "We're really keen to provide fun, hands-on activities that encourage them to work as a team and find out how things work, while learning some fundamental engineering principles."

The group has also received backing from the BBC's Bang Goes the Theory scientist Jem Stansfield, who has sent each child a personally signed photograph.



One-minute interview

Tim Skuse

Job: lands officer south-west

Start date: March 2009

BACKGROUND:

I joined National Grid from a national firm of estate agents specialising in selling country houses and estates.

QUALIFICATIONS:

I'm currently working towards qualifying as a rural practice chartered surveyor.

FAMILY MATTERS:

Having recently relocated with my wife Jo and daughter Bethan from the Thames Valley region, I now live in a village on the edge of the Cotswolds area.

RELAXATION:

All things mechanical. Any spare time is spent restoring classic Series 1 Land Rovers, much to my wife's dismay!

LIKE ABOUT THE JOB:

I enjoy meeting grantors from a wide variety of backgrounds.

ENJOY READING:

First Overland by Tim Slessor, about an expedition from London to Singapore in 1955 – by Series 1 Land Rover!

PET HATE:

Discourteous drivers.



FRESH START: An excavator clears one of the river passages

Welsh rivers project wins vital **new funding**

The success of river improvement schemes part-funded by National Grid during the Milford Haven pipeline project has helped secure valuable new funding for the work of the Camarthenshire Rivers Trust (CRT) in Wales.

Enjoying full charitable status, the CRT is a volunteer-run organisation dedicated to the preservation of rivers for their environmental value and economic benefit to the community.

Now it has received a £525,000 grant from the Welsh Assembly Government and European Fisheries Fund towards further habitat restoration work in the region.

Along with the Environment Agency Wales and Camarthenshire County Council, National

Grid part-funded three schemes on the Nant Myddyfi tributary to enable salmon to swim upstream more easily to their traditional spawning areas.

“We’re very grateful to National Grid for its financial and moral support in making these early joint projects a success,” said CRT chairman Gethyn Thomas. “Being able to point to a successful track record was a key factor in securing this future backing.”

Around 150km of new fish-spawning habitat will be created as a result of the latest funding, through barrier removals and the construction of 120 fish passes, while some 32km of acidified headwaters will be limed to restore water quality in the rivers.

Your take on the severe weather



“The lead-up to Christmas is always a hectic time for our family business selling speciality oven-ready ducks and so it was a worry when snow in some parts of the country threatened to disrupt deliveries. But all the mail orders reached customers in time for the big day and we managed to get our van through to the local farm shops and butchers.”
DEBBIE BAKEWELL, BAKEWELL DUCKS, NEAR KIDDERMINSTER



“It’s been one of the hardest winters in a long time. Our Highland ponies are hardy animals and were able to dig down through the 15 inches of snow to get at the grazing, but they still needed extra haylage. We also had to thaw out drinking troughs and water pipes in barns where we over-winter cattle.”
JEAN RALSTON, MOSS-SIDE HIGHLAND PONIES, PERTH



“On one day we had to discard around 2,500 litres of milk, worth more than £800, when the milk tanker could not get through the snow and ice. Water troughs for our Holstein-Friesian cows also froze and we had to refill them using 900-litre tanks of water transported by a JCB.”
JULIA PAGE, MORETON MORRELL COLLEGE FARM, WARWICKSHIRE



Keeping the gas supplies flowing in **the big freeze**

The worst cold snap in more than 30 years created an unparalleled demand for gas in January, as the nation turned up the heating thermostat.

Sub-zero conditions and a series of supply losses from Norwegian importation pipelines led to National Grid issuing four Gas Balancing Alerts in a week. These are a signal to the market to increase gas supplies or reduce demand.

“On each occasion the market made up the shortfall in supply by the end of the day,” said Andy Malins, National Grid’s acting gas operations manager. “At no stage was there actually any danger of gas supplies running out

to residential users.” The deficit was made up by gas from gas storage sites, subsea interconnectors with Belgium and Holland, and Liquefied Natural Gas imports.

More than 100 large companies were involved in temporary interruptions to supply, as National Grid Gas Distribution asked suppliers to invoke clauses in special ‘interruptible’ contracts.

“These are one of the tools used to balance the gas network,” said Mark Freeman, National Grid Gas Distribution’s control centre commercial manager. “Some large firms pay lower gas transportation charges, in return for switching to alternative fuels at times of extreme demand.”

Explore the Cotswolds

National Grid is a sponsor of the Winchcombe Cotswolds Walking Festival, from 21 to 23 May, held in some of the UK’s most beautiful countryside.

The three-day programme includes walks to suit all abilities, from a strenuous hike along the world-famous Cotswold Way to a ramble through Winchcombe’s historic town centre. All walks are led by experts.

National Grid liaised closely with the festival organiser – the Winchcombe Walkers are Welcome group – in advance of the Wormington to Sapperton gas pipeline project (see page 14-15). Footpath diversions are in place at sites affected by the works.

To reserve a place on a walk, or to find out more, go to the organiser’s website at www.winchcombewelcomeswalkers.com.

TEAM EFFORT: (left) Paul Swinbourne and John Balderstone with the new railway bridge in the background

Helping to bridge the gap

National Grid has kept a promise made, more than 20 years ago, to replace a railway bridge on a steam heritage line in the Cotswolds.

Laverton bridge is owned by the Gloucestershire Warwickshire Railway (GWR), which operates a 20-mile return service between Toddington and Cheltenham Racecourse.

GWR granted Transco (which later merged with National Grid) permission to remove the bridge in 1988 in order for heavy equipment to be moved along the unclassified access road to Wormington compressor station, which was being modified. The licence was conditional on the bridge being reinstated within 21 years.

Having extended the line to Cheltenham Racecourse seven years ago, GWR turned its attention to restoring the bridge so that services could, in time, run another five miles in the opposite direction from Toddington to Broadway.

“GWR made contact and we agreed to co-operate fully with the project,” said Paul Swinbourne, National Grid lands officer south-west. “A key priority was that the bridge deck would meet all current structural, as well as railway, standards.”

It was decided to install a new double-track concrete bridge, rather than restore the original steel structure, which had suffered from corrosion.

Work on the bridge finished in December. “The new deck weighs about 150 tonnes, compared to its 24-tonne predecessor, and has a design life of 120 years,” said GWR’s bridge engineer John Balderstone.

“A lot of hard work has gone into the rebuild and we’re extremely pleased with the result. We’re also very grateful to National Grid for honouring an agreement made more than two decades ago.”

THE GWR IS MAKING TRACKS

2010 is a special year for GWR as it marks the 175th anniversary of the Great Western Railway, which originally operated the route. A nine-day celebration event is planned for 29 May-6 June. Besides the spectacular Cotswold scenery, the railway features one of the longest tunnels on a preserved railway and a 15-arch viaduct at Stanway. Services run from March on most weekends and bank holidays until December. More information at

www.gwsr.com.

STEAM IN ACTION: (below) The railway’s Foremarke Hall locomotive emerges from a tunnel



Paradise restored

A once-grand country estate that fell into disrepair and neglect has been reincarnated as gardens and an arboretum visited by more than 30,000 people each year

Marks Hall Gardens and Arboretum, near Coggeshall, in the heart of rural Essex, appears to be very much the traditional English estate, complete with ornamental lakes and a 17th century walled garden. But things could have turned out very differently.

The estate (an electricity grantor) was left in trust to the nation by its owner Thomas Phillips Price in 1932, who believed that the ancient oak woodlands and extensive gardens should be preserved for future generations. He had hoped that the bequest would be taken on by the Royal Botanical Gardens at Kew.

Nothing came of it at the time, and in the years that elapsed between his own death and that of his third wife in 1966, who held a life interest, catastrophic changes befell the estate.

During World War Two the grounds became a base for 2,500 air force personnel serving at nearby Earls Colne airfield. At the end of the war, the barracks passed to the local authority and were used as temporary housing for displaced persons, many of whom came from the East End. Sadly, most of the estate's prized veteran oaks were felled and large tracts leased to the Forestry Commission.

Neglected and vandalised, the mansion was demolished in 1950 – at the time large country houses were a liability and they were disappearing at a rate averaging one a week.

“Despite serious misgivings, the director of Kew and government officials took the decision



NEW SEASON: Vibrant colours are a feature of Marks Hall Gardens and Arboretum in the spring

that the bequest could not be refused and in 1971 the Thomas Phillips Price Trust was established as a registered charity to administer the restoration project,” said Richard Ramsey, agent for the trustees.

With the mansion gone, the trustees created a new focus by planting an arboretum on 120 acres released by the Forestry Commission. Work also started on restoring the overgrown gardens, silted-up lakes, crumbling weirs and dilapidated buildings, and new oaks were planted in restored parkland.

“From the outset we decided not to try and recreate the past,” said Jonathan Jukes, who has been curator at Marks Hall since 1985. “There was nothing left apart from the hard structures and so we had a free hand to create something new on the bones of the historic landscape.”

The arboretum is arranged on a geographical theme with plantings grouped from Europe, the

Americas, Asia and the Southern Hemisphere. “Forming the backbone of the collection are plants and trees selected for their known scientific value, or because their native habitat is under threat,” said Jonathan.

One such area is called Gondwanaland (a super continent that existed 200 million years ago) created on a 10-acre site.

The planting includes a grove of 80 Wollemi Pine, known to exist (from pollen and fossil records) at the time of the dinosaurs. It was only in 1994 that a surviving remnant was discovered in an isolated canyon outside Sydney.

Ten years ago the walled garden was revitalised with a contemporary design by Brita von Schoenaich. On the opposite bank is the winter garden, the vibrant scarlet red of dogwoods form a vivid contrast against the bleach-white trunks of birch trees.

The visitor centre, with its tea room and shop, is housed in a 15th century timber-framed barn relocated from another part of the estate, and there are more than six miles of walks.

A £50,000 grant from the Heritage Lottery Fund has just been awarded to Marks Hall towards access and learning improvements, including a network of hard paths in the arboretum as well as educational resources and interpretation boards.

Marks Hall has come a long way from the dark days of the 1950s and 60s. “We’d like to think Mr Price would be pleased with how things have turned out,” said Richard.



GUIDING HAND: (left) Richard Ramsey; (above) The upper lake with graceful willows in the background



“Marks Hall is on the Braintree to Twinstead 400kV overhead power line and there are nine towers that cross the estate. I’ve visited the grantor on a number of occasions over the last 20 years in my capacity as a lands officer and it’s remarkable how the place has been transformed into a popular visitor attraction”

Barry Cullimore lands officer south-east

VISIT MARKS HALL GARDENS

The gardens and arboretum are open to the public Tuesday to Sunday from 30 March to 31 October 2010 and Friday to Sunday from 5 November to 19 December 2010. Open bank holiday Mondays March to October and half-term holidays. Call 01373 563 796 or visit www.markshall.org.uk.

DIGESTING THE PROBLEM

How generating biogas in anaerobic digesters could accelerate the move to a low-carbon economy

Supporters of anaerobic digestion (AD) say it could be the ‘silver bullet’ to address the UK’s pressing renewable energy, energy security and waste management needs.

The government predicts the technology will be key to hitting targets to reduce carbon emissions by 34 per cent by 2020 and increase the proportion of energy from renewable sources to 15 per cent in the same period.

AD is a process in which micro-organisms break down organic materials, such as food waste, manures and slurries, green waste or energy crops, in the absence of oxygen, to produce biogas (mainly methane and CO₂).

Biogas can be burned in a Combined Heat and Power unit to generate electricity and heat on-site, with surplus electricity sold to the grid. With further processing it can be used as a fuel for transport or injected directly into the gas grid.

The process is carbon neutral because it provides energy with no net increase in atmospheric CO₂. And with the UK increasingly reliant on gas imports, AD has energy security of supply benefits too.

Converting biodegradable wastes to energy in an AD plant also helps to cut greenhouse gas emissions from landfill. Methane from decomposing waste makes up 4 per cent of total UK emissions and as a greenhouse gas, methane is 21 times more potent than CO₂.

As the cost of complying with waste disposal legislation increases (landfill tax rises to £48 a tonne in April), turning waste

Big facts

- If you put all of the UK’s domestic food waste in an anaerobic digester it would generate enough electricity for 350,000 households.
- Households throw away £12 billion of food every year, wasting money and natural resources and contributing to climate change.
- The UK currently obtains about 2 per cent of its energy from renewable sources.



CREATING ENERGY: Daveyhulme sewage treatment works where National Grid has teamed up with United Utilities on a pilot project

into energy makes good economic sense too. Another benefit is that AD produces an organic nutrient-rich biofertiliser by-product, avoiding use of scarce fossil fertiliser sources.

More than 100 million tonnes of organic material a year is suitable for AD in the UK, including 18-20 million tonnes of food waste.

To drive the adoption of AD more widely, Defra invested £10 million in the creation of five AD demonstration plants. The aim is to have 1,000 farm-based AD units by 2020, as well as 100 larger facilities that process food and other commercial waste.

According to the Renewable Energy Association (REA), renewable heat is the sleeping giant of renewable energy because heat dominates energy use in the UK and produces 47 per cent of CO₂ emissions.


For this reason, National Grid believes that rather than using biogas from landfill and sewage treatment plants to generate electricity, it would be more efficient, where there is no use for the processed heat, to utilise it in the gas network as a renewable heating fuel.

The Company says a major contribution to Britain’s domestic heat demand could be met by turning sewage, food waste and unwanted wood into biogas, which if cleaned and compressed to create biomethane, could be directly injected into the grid.

“Because the country already has an extensive gas grid, there would be little need for infrastructure development or any requirement for customers to change their appliances,” pointed out Dave Tilley of National Grid’s Sustainable Gas Group.

National Grid is working jointly with United Utilities at the Daveyhulme sewage treatment works on a demonstration project, which will supply gas to homes in Manchester.

With all its advantages in terms of getting rid of waste, generating electricity or heat and producing a usable fertiliser by-product, we are sure to be hearing a lot more about AD.



WASTE MOUNTAIN: Using methane as an energy resource both displaces fossil fuel use and minimises emissions to the atmosphere

Waste not want not

An anaerobic digester developed by a Cheshire electricity grantor has transformed a waste product into a valuable resource for the business

MAKING BIOGAS: (below) The anaerobic digester can process up to 5,000 tonnes of green waste a year

The glasshouses at A Pearson & Sons' (APS Ltd) nursery in Alderley Edge produce around 3,500 tonnes of vine tomatoes a year, mostly for Tesco.

The family-run business, formed more than 60 years ago, was presented with Tesco's first-ever environment award in 2008 for its environmentally friendly measures.

The tomato vines are supported by strings suspended from the glasshouse roof and the plants are grown hydroponically in inert and sterile Rockwool insulation material, while being irrigated with nutrient-rich water via a trickle lead. Tomatoes are produced without the use of pesticides, as natural insect predators are employed to control pests.

"A major focus in the past 15 years has been to step back and look at all the environmental impacts of what we do and to try to close the

loop by putting in place measures to maximise energy efficiency and cut emissions," said Phil Pearson, chairman of APS Ltd.

"Throughout the growing season – from April to November – leaves must be constantly removed from the tomato stems, which previously resulted in some 5,000 tonnes of green waste sent to landfill. At £68 a tonne, including landfill tax, this was a significant cost to absorb and not very environmentally friendly."

To address this, Phil has worked with industrial gases specialist Steve Price over the last four years to develop a £500,000 anaerobic digester (AD), capable of breaking down the tough cellulose material into useful outputs.

The leaves are shredded and then passed through four vessels in what is a bio-refinery rather than a conventional AD unit. Outputs from the AD include water and a nutrient-rich fertiliser liquid, which can be recycled back to the tomato plants, CO₂ for the crops and a biogas, which is 97 per cent biomethane.

One option is to use the biomethane to fuel the nursery's Combined Heat and Power (CHP) unit, which heats the glasshouses and supplies surplus electricity to the local town.

CO₂ from the AD unit and the CHP unit is scrubbed to remove impurities and blown into the glasshouses where it contributes to a higher crop yield and tastier tomatoes. Any surplus heat is stored in 600,000-litre capacity water storage



BIRD'S EYE VIEW: The A Pearson & Sons nursery from the air

tanks for recycling back to the glasshouses. The glasshouses are constantly monitored by a computer-controlled system, which uses the minimum amount of water and energy to maintain the optimum humidity, temperature, light, water, nutrients and CO₂, that tomatoes need for producing sugars. The system is also fed by real-time Met Office weather forecast data so that it can accurately predict the plants' needs.

Meanwhile, Phil is also looking at other uses for the biomethane produced in the AD. In a compressed form it can be used as a transport fuel (enough to run six Tesco delivery vans for a week) or injected into the gas grid.

Working with the University of York, Phil is also looking at how the cellulose extracted from the AD process can be reused to provide a biodegradable cellophane packaging for the firm's tomatoes.

TURNING GAS INTO CASH

David Collins, who runs the UK Biogas Group for the Renewable Energy Association (REA), explains what financial incentives are available for anaerobic digestion (AD)

Q What is the REA?

A The Renewable Energy Association is the largest renewable energy industry association in the UK, covering all renewable power heat and fuels. The association has more than 500 members, including generators, project developers, fuel and power suppliers, equipment producers and service providers.

Q What is the role of the UK Biogas Group?

A It was formed by the Renewable Energy Association to work on overcoming barriers to AD. It now has over 120 members, and 50 companies in the UK biogas industry regularly attend its bimonthly meetings.

Q What are Renewable Obligation Certificates?

A ROCs are green certificates that can be issued to those generating their own renewable energy. For every MWh generated, the owner receives a payback from a licensed electricity utility company.

Q Who do they benefit?

A Since the introduction of double ROCs per MWh in April 2009, so-called large Centralised Anaerobic Digester (CAD) plants have prospered and now present a good commercial proposition.

These plants typically accept 35,000 to 40,000 tonnes of food waste – for which they attract a ‘gate fee’ – and sometimes a small percentage of animal slurries. With around 1MW electrical capacity, these plants typically cost

somewhere in the region of £7 to £9 million to construct.

Q What about on-farm plants?

A The simpler alternative is the farm model using its own slurries mixed with crops. To provide one illustration, a 1MW electrical output in this category would need 1,200 cows and 400 hectares of maize silage and cost around £3.8 million to construct. You can expect between 15p and 16p per kilowatt hour (kWh) from ROCs for AD under the new bands, which came into force in April. Unlike the larger CADs, smaller on-farm facilities don't appear to be viable on ROCs without grant funding.

Q How much can you earn from waste?

A You can expect around 90 cubic metres of biogas from a tonne of food waste, 190 cubic metres from maize silage and 20 cubic metres from cow slurry. Bearing in mind that only 35 per cent of the energy is converted to electricity in Combined Heat and Power units, from one wet tonne you would earn £27 from the food, £54 from maize silage and £6 from the slurry.

There's also the value of the heat produced to take into account. Plus, the option to clean biogas to methane and use it in vehicles or inject it into the grid, where more of the biogas energy can be used.

Q What are feed-in tariffs (FITs)?

A These were announced last



“
Because you are producing some of your own power, you will also buy less electricity and so... pay less for it

month, and are paid by electricity suppliers for electricity generating technologies. They apply to installed capacity up to 5MW and, in the case of biogas, consist of a generation tariff (9p for more than 500kW or 11.5p for more than 550kW) and an additional export tariff of 3p.

You will also be able to opt out of the export tariff and sell the electricity on the open market. The generation tariff will be paid whether or not the electricity produced is used on-site or exported to the local network. Because you are producing some of your own power, you will also buy less electricity and so you will pay less for it.

Q How effective are FITs?

A The REA and Friends of the Earth, who campaigned for FIT, hoped they would be the main tool to stimulate the development of on-farm and community level units without the need for grant funding. This looks unlikely at current levels, but the REA is engaged with the Department of Energy and Climate Change about increasing them.

Q What about renewable heat?

A The Renewable Heat Incentive (RHI) makes payments for every kWh of renewable heat you produce. It is proposed that the scheme will be paid for either through general taxation or through a levy from sales of gas and other fuels used for heating. It comes into force in April 2011 and the proposed tariff for injection into the gas grid is 4p per kWh. Biomethane injection has opened up huge opportunities to use all of the biogas energy produced beyond the existing incentives for electricity. The RHI also includes benefit for heat from biogas for small installations of up to 200kW thermal.

Q Can I get more advice?

A The REA has leading industry experts in the field who can help members with enquiries. AD operators and companies or farmers thinking of joining the UK Biogas Group are welcome to come along to see what goes on.

CONTACT

David Collins dcollins@r-e-a.net

Meeting the energy challenge

Significant investment is underway to reinforce networks and to connect new generation sources

WORMINGTON TO SAPPERTON GAS PIPELINE PROJECT

» **When:** March-Oct 2010

» **Why:** A new pipeline is being constructed in Gloucestershire to help meet growing demand for gas in south-west England.

» **What:** The 900mm-diameter (36-inch) pipeline will run for 44km between National Grid's Wormington compressor station, near Broadway, to the above-ground installation at Sapperton, near Cirencester.

Most of the pipeline route passes through agricultural land within the Cotswolds Area of Outstanding Natural Beauty. It will cross

36 roads, 15 watercourses and two railways, as well as six long-distance footpaths. Special measures will be taken to conserve the habitat at four Key Wildlife Sites (KWS) of county importance. National Grid will work closely with the Cotswolds Conservation Board to safeguard and, where possible, enhance the character of the landscape.

» **Lie of the land:** "Directional drilling will be used on a section of 900 metres where the pipeline transfers from the low-lying Vale of Evesham at Hailes Bank on to the Cotswold escarpment, and at three road and river crossings," said Ian Sarson, National Grid's senior project manager.

HOLE HOUSE REINFORCEMENT PIPELINE PROJECT

» **When:** Spring-autumn 2011

» **Why:** A new 900mm-diameter, high-pressure gas pipeline is planned at Hole House Farm, near Middlewich, Cheshire. The pipeline is part of an expansion of gas storage facilities in former brine cavities to provide additional energy security in the face of declining gas production in the North Sea.

» **What:** The 3.25km-long pipeline will supplement the smaller diameter pipeline, which already serves EDF's 10 existing gas storage cavities and will enable a greater volume of gas to be exported to the transmission system.

"Gas stored in former brine cavities can



be extracted much more quickly than from depleted oil or gas fields, and so is suited to meeting short-term spikes in demand in times of cold weather," said Peter Johnson, National Grid's project manager.

» **Lie of the land:** The pipeline will be constructed entirely through private agricultural land owned by five National Grid grantors.



SPECIAL MEASURES: Around 60 dry stone walls will be removed during the Wormington project and reinstated by specialist dry-stone walling contractors. To help with their understanding of the techniques, members of the project team attended a two-day course run by the Cotswolds Conservation Board



MACCLESFIELD TO STOCKSBRIDGE OVERHEAD LINE REFURBISHMENT

» **When:** April-December 2010

» **Why:** A full refurbishment is underway on a single circuit of the 400kV overhead line between Macclesfield and Stocksbridge in Cheshire. Completion of the work will significantly reduce the amount of ongoing maintenance required on the line.

Load capacity on the line is also being updated to accommodate planned new generation from a 900MW Combined Cycle

Gas Turbine power station being built by Powerfuel at Hatfield, near Doncaster. In its planned second phase, it will become one of the world's largest 'clean coal' power stations, with Carbon Capture Storage (CCS) technology to capture harmful carbon emissions when burning coal.

» **What:** The main focus of the work is on a 18.2km section of the route, with a total of 55 towers. Conductors and all fittings are being replaced, steelwork will be strengthened and some tower foundations refurbished.

"The project involves quite complex access considerations where five towers are located in a residential estate in Hazel Grove village," said Paul Devenish, project manager Electricity Alliance West.

"The route also crosses the Macclesfield Canal at three points, as well as eight A/B roads, four 11kV pole lines and a mainline railway to Manchester."

» **Lie of the land:** Mitigation measures will be used at sites where surveys indicate the presence of crayfish, great crested newts, bats, water voles and nesting birds. One span oversails a former brickworks in Poynton, which is now a six-hectare Local Nature Reserve.



MEDWAY TUNNEL CABLE UPGRADING SCHEME

» **When:** September 2009-October 2010

» **Why:** The load capacity of a 400kV cable running under the River Medway is being upgraded as part of a wider project to reinforce the electricity network in the Thames Estuary. The project will also facilitate the management of power outages needed for other works in the scheme.

» **What:** The cable runs in a 1,700-metre tunnel under the River Medway between Horseshoe Point (on the Isle of Grain) and Chetney Marshes in Kent. "In order to achieve the circuit upgrading, we are upgrading the cable ventilation with a more efficient fan cooling system and replacing the existing 400kV cable cooling oil tanks," said

Clem Jillings, project engineer Electricity Alliance East. "The power supply is also being replaced with new 11kV cables to National Grid's 400kV substation at the Isle of Grain power station, a mile away."

The cable tunnel is a gateway into Central London for two new generation sources on the Isle of Grain coming on stream in early 2011– the 1200MW capacity BritNed Interconnector subsea cable with the Netherlands and a new 1290MW Combined Heat and Power unit. It will also connect the forthcoming 664MW London Array and 300MW Thanet offshore wind farms.

» **Lie of the land:** A number of measures are being taken to protect wildlife in the Chetney Marshes Site of Special Scientific Interest at one end of the tunnel.

CATCHING THE SAFETY HABIT

Think safe, act safe, be safe – that’s the message behind National Grid’s advice about fishing near overhead power lines

The safety of National Grid grantors and other land users is one of the Company’s highest priorities. So when grantor Clive Kenyon of the Deeside Conservation Trust enquired about the availability of smaller electricity warning signs for use at lakeside pegs (cast-off points), James Dean, lands officer north-west and Scotland, wasted no time in tracking some down.



KEEPING IN CONTACT: James Dean has worked with Clive Kenyon to enhance safety at the site

“I first met Clive in autumn 2009 when I visited the Lagoons Fishery as part of an initiative to offer safety advice and guidance to angling clubs and water sports venues in the area that have high voltage power lines crossing them,” said James.

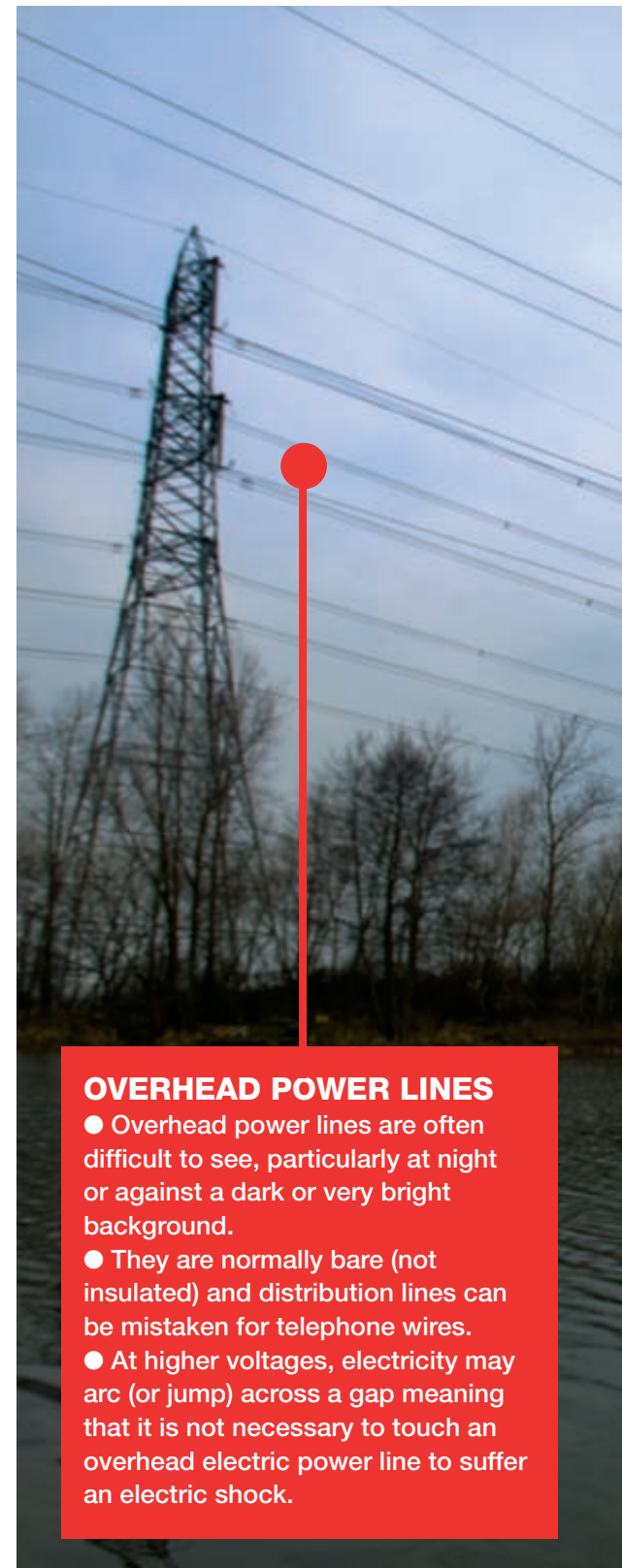
Working with Geoff Parkinson, overhead line delivery engineer, James was able to source some suitably sized signage and they were subsequently installed on posts at all the pegs.

“It’s all too easy to become so familiar with your surroundings that structures like power lines become almost invisible in the landscape,” said Clive. “So these signs are a real wake-up call to remain vigilant at all times.”

He obtained a 50-year lease at the site back in 1996 from the Welsh Assembly. The lakes were originally created to form a natural floodplain when the Deeside Industrial Estate was developed. “I think the Assembly was only too pleased that I wanted to develop the area as a recreational resource, while also maintaining it as a wildlife refuge,” Clive said.

“Maintaining a healthy environment for fish requires good quality water, which also benefits wildlife. The lakes are home to a variety of ducks, herons, kingfishers and cormorants.”

The four lakes, which occupy some 50 acres,



OVERHEAD POWER LINES

- Overhead power lines are often difficult to see, particularly at night or against a dark or very bright background.
- They are normally bare (not insulated) and distribution lines can be mistaken for telephone wires.
- At higher voltages, electricity may arc (or jump) across a gap meaning that it is not necessary to touch an overhead electric power line to suffer an electric shock.

extend for about a mile in a corridor that drains surface water into the nearby River Dee. The two overhead power lines (Carrington to Connah’s Quay and Capenhurst to Connah’s Quay) run in parallel down the centre of the corridor.

The pegs at the fishing lakes are all positioned at a safe distance from the overhead power lines and, in most cases, the cast-off points face the conductors so there is a clear line of vision. Rod length is limited to a maximum of 13 feet, while braided lines, which can hold water and



FISHING RODS AND POLES

- Fishing rods and poles made from carbon fibre and similar materials will conduct electricity, and many other materials conduct electricity when they are wet.
- Carbon fibre poles can reach lengths in excess of 17 metres. They are designed to be shipped out parallel to the water and should never be raised in the vertical position.

AT THE PEG

- Always unpack, set up and put away rods or poles at the water's edge.
- Do not fish within 30 metres of overhead power lines that cross or run parallel to the water, unless a thorough risk assessment justifies a deviation from the rule.
- Higher voltage lines normally have yellow 'Danger of Death' warning notices, but lower voltage lines may not.
- Remember, look up and look behind you.

conduct electricity, are restricted to three feet.

"All new members receive a safety induction when they join, there are warning signs at strategic locations, and rule infringements carry the punishment of a three-month ban and a £50 fine," said Clive.

Grantors who own, lease or make waters available for fishing where power lines are present have a legal responsibility to ensure anglers are made aware of the dangers by erecting suitable signage and, where possible, issuing written or verbal instructions about

where to fish and where not to fish.

Deeside Conservation Trust has recently updated its site risk assessment, looking in detail at potential hazards associated with the power lines, the probability of an incident and the likely consequences. The assessment also details the control measures taken to eliminate or reduce the risk to a minimum.

"I was impressed by how quickly James responded to our requests for the signage and by the level of support and advice we've received," said Clive.

FIND OUT MORE

A guide entitled Angler Safety is available from the Energy Networks Association (ENA). Download it at www.energynetworks.org or call the ENA on 020 7706 5100.

Grantors who own or operate fisheries can obtain danger notices from their local lands officer team (see page 2 for contact details for each region), but are asked to erect the signs themselves.



LOOK AND LEARN:
(above) A group of visitors learn about farming and nature conservation at a LEAF demonstration farm (right) Caroline Drummond (second right) A trailer ride during Open Farm Sunday



TECHNOLOGY IN TUNE: (above) Integrated Farm Management marries the needs of successful commercial farming practice with nurturing the environment for habitat and wildlife

Farming with nature

For nearly two decades LEAF has led the way for British farming, demonstrating how successful commercial land management can go hand in hand with caring for the environment

Open Farm Sunday – British farming’s annual open day – was once again a huge success last year, with 425 farms all over the country welcoming an estimated 140,000 people into the countryside to learn more about the story of food, farming and nature.

The organisation behind the event is Linking Environment And Farming (LEAF), a national charity based in Stoneleigh, Warwickshire.

LEAF was founded in 1991 as a result of a common concern for the future of farming by a group including farmers, environmentalists, consumers and government. At that time, an increasing gap appeared to be opening up between farmers and the public.

The organisation’s philosophy is Integrated Farm Management (IFM) – a whole farm approach advocating efficient and profitable production, which is economically viable as well



National Grid is a corporate member of LEAF and a principal sponsor of Open Farm Sunday. “We very much share the organisation’s

passion for protecting and, wherever possible, enhancing the natural environment,” said Hector Pearson, land and development stakeholder and policy manager.

as being environmentally responsible.

“Our work is all about encouraging sustainable farming,” explained Caroline Drummond, chief executive of LEAF, who was awarded an MBE for services to agriculture last year.

“It’s in everyone’s interest that we have a

thriving countryside that is good for wildlife, supports viable farming businesses, and produces wholesome and affordable food. A commitment to animal welfare and good husbandry, efficient soil management, the use of crop rotation and a minimal reliance on fertilisers are all important elements of this approach.”

To showcase IFM there is a network of 45 LEAF Demonstration Farms that welcome visits from a broad range of individuals and organisations interested in farming and food production. Over the coming months, LEAF is looking to refresh and expand the concept.

Becoming a member of LEAF provides farmers with numerous benefits. The LEAF audit tool, for example, helps to prioritise decisions, identify and implement improvement plans and demonstrate environmental responsibility to others. LEAF’s approach can save farmers time and money, and help them to



benchmark against other LEAF farmers.

Meanwhile, the LEAF Marque accreditation scheme demonstrates to customers of Waitrose, and an increasing number of other retailers, that they are purchasing nutritious, affordable food, grown with care for the environment.

Another recent initiative is 'Let nature feed your senses', where LEAF is working with the Sensory Trust to help disengaged groups develop a lifelong love of nature through visits to farms, nature reserves and city farms.

"Going forward we have ambitious plans to build on our industry partnerships to take IFM forward, seeking new ways to get the farming message out to consumers and to showcase the benefits of sustainable farming to the countryside, economy and society as a whole," said Caroline.

The government's 'Food 2030' strategy calls for a joined-up food approach in which consumers can access sustainably produced food, grown by farmers who are actively reducing their greenhouse gas emissions, reducing waste and using less energy.

"We are ideally placed to help farmers to meet the challenge of producing more but also having less impact on precious resources, while at the same time engaging the local community," added Caroline.



OPEN FARM SUNDAY 13 JUNE 2010

Ten regional coordinators are in place to organise workshops to help make this year's promotion an even bigger and better event. LEAF provides a free organiser's pack, which includes publicity material, health and safety guidance and suggested activities. To find your nearest farm, or to attend a workshop and get involved, visit www.farmsunday.org or call 02476 413 911.

Going the extra green mile

As you would expect from a former LEAF chairman (and National Grid grantor) Robert Campbell is an enthusiastic advocate of the integrated approach to land management.

Winter wheat and winter barley are the main crops on his 1,270-acre LEAF Demonstration Farm in Stokesley, just outside Middlesbrough.

"Crop rotation is used to maintain soil health," said Robert. "We manage the land using minimum tillage. Only shallow excavations are made to 'shake' up the soil when seeding crops and the method also has proven carbon retention benefits."

On this mixed farm, the livestock and

arable enterprises are totally integrated – cereal and grain provide feed and straw for the animals, which provide soil-enriching manure for the crops.

"All farmers on a daily basis are juggling a number of balls in the air, balancing the needs of the environment, as well as feeding people, the needs of livestock, the needs of the local community and the regulator," explained Robert.

"Financial assistance from environmental schemes goes some way to help with the costs of farming for habitat, but farmers do it mainly because we place a high value on the countryside and wildlife."

To contact Gridline:

☎ 01926 656 325

✉ gridline@uk.ngrid.com

📍 23-25 Waterloo Place, Warwick Street, Leamington Spa, Warwickshire CV32 5LA.

WIN A FABULOUS SONY DIGITAL CAMERA

Move up to the next level of photography with the amazing Sony Cyber-shot W220 digital camera.

The camera combines point-and-shoot ease-of-use with advanced features in a sophisticated, compact body.

Outstanding features include a 12.1 megapixel resolution, a large 2.7-inch LCD screen, 30mm-wide angle lens, 4x optical zoom and optical steady shot to eradicate camera shake.

To be in with a chance of winning this camera, simply answer the following question:

Q What is the size of the LCD screen on this camera?

Send your answer to Gridline Cyber-shot competition, 23-25 Waterloo Place, Warwick St, Leamington Spa, Warwickshire CV32 5LA.

Please note you must be a National Grid grantor to enter this competition.

The entry closing date is 14 May 2010.

**WIN
A SONY
DIGITAL
CAMERA**



THE SNOWMAN'S OVERDONE IT AGAIN!

Well done to electricity grantor Julie Hubbard of Balsall Common, Warwickshire, the winner of the last photo competition on the theme of 'festive celebrations' for this humorous take on a New Year's Eve dinner table.



WIN a Virgin Balloon Flight!

Enter this competition to win an airborne adventure and see the world from a totally new perspective

Gridline has teamed up with Virgin Balloon Flights to offer the winner of this issue's photography competition a fantastic champagne balloon flight for two people.

This great prize includes a three- to four-hour experience, with about an hour in the air, a champagne toast on landing, a certificate signed by Sir Richard Branson and a souvenir brochure. Choose from over

100 launch sites across the UK. The theme for the next photo competition is 'weather'.

Send in your photo to Gridline Photo Competition, 23-25 Waterloo Place, Warwick St, Leamington Spa, Warwickshire CV32 5LA. Or email your photo to gridline@uk.ngrid.com. Closing date is 14 May 2010. Only grantors are eligible to enter and regrettably prints cannot be returned.



SKY-HIGH TRIPS FROM JUST £99

Fly from over 100 launch sites in England, Scotland or Wales for just £99 per person with Weekday Morning tickets (RRP £119). Or, fly weekends with Weekday Anytime tickets (RRP £134) for just £119pp. But be quick, this fantastic offer ends on 14 May 2010. Simply call 01952 212 750 or visit www.virginballoonflights.co.uk and quote Gridline.

Terms & conditions

Competition prize refers to a pair of Virgin Balloon Flights seven day anytime tickets, which have no cash value, are non-refundable and non-transferable. Winners must contact Virgin Balloon Flights within three months of being notified to claim their prize. Reader offer is valid until 14 May 2010. Passengers must be over 7 years of age and at least 4'6" in height. Children aged under 16 must be accompanied by a responsible adult. Virgin Balloon Flights is unable to fly passengers who are pregnant or who have recently undergone major surgery. Full terms and conditions are available at www.virginballoonflights.co.uk.