

Gridline

The magazine for National Grid grantors

Pipelines

Two major pipelines are being built in the north of England to distribute natural gas from Norway. Engineers have started to lay the first sections of the high pressure gas transmission pipelines, one running for 53km between Ganstead and Asselby in Yorkshire, and the other 94km from Pannal in Yorkshire across to Nether Kellet in Lancashire. Full story, pages 10 and 11.



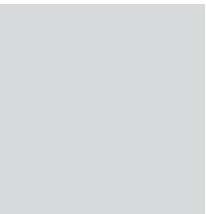
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4&5



8&9



10&11



12&13



18&19

Contacts

nationalgrid

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. We act as the main interface for

landowners who have our gas and electricity equipment installed on their land. Listed below are your local land and development team contacts.

electricity

North and North West:

0113 2908224/8235

South East: 01268 642028

South West: 01454 222044

Your wayleave teams and their mobile numbers

North East

Wilson Holmes 07836 543539
Scott Stephenson 07836 543541

North West

Mark Thomas 07887 825073
Martin Bretherton 07786 021086

North East (South)

Mike Rockett 07836 364634
Janet Clarke 07770 645599

North West (South)

Alan Whitmore 07836 629530
Bob Tute 07836 668504

East Midlands

Robin O'Brien 07836 293137
Simon Booth 07786 021088

West Midlands

Paul Ganley 07836 549748
Lee Durant 07776 121429

East Anglia

Barry Cullimore 07836 217478
Sue Dunham 07766 785684

South East (North London)

Brian Mead 07836 217520
Phil Burgess 07836 222051

South East (South London)

Paul Sage 07836 638823
Alison Williams 07788 568678

South Wales

Simon Gronow 07836 207262
Robert Miller 07836 743236

South West

Richard Biggs 07785 716961
Jane Bishop 07771 864528

Wayleave payments

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

Emergencies

• Emergency calls to report pylon damage to National Grid can be made on 0800 404090.

Make a note of 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, ring the EMF information line 08457 023270 (local call rate).



gas

Gas Distribution (UKD)

John Cunningham
Senior land and development officer
Tel 0113 2908236
Fax 0113 2908530
Mobile 07836 364633

North London and East of England

Simon Dando
Land and development officer
Tel 01452 316078

Fax 01452 316092
Mobile 07976 259211

North West

Charles Miller
Land and development officer
Tel 0161 7760706
Fax 0161 7760601
Mobile 0797 6510120

West Midlands

Barry Mercer
Land and Development Officer

Tel 01452 316049
Mobile 07785 290457
Fax 01452 316092

Administration

Sue Makin
Tel 0191 2163519
Fax 0191 2163484

Gas emergency

0800 111999

Work safely near pipelines

Be safe — that's the message from National Grid to remind landowners and occupiers that they must ALWAYS ring TWO numbers for gas pipeline enquiries before starting any work on their land.

1) National Grid's gas transmission pipelines may be directly affected by the work you are considering. So in order to determine if this is the case — and to ensure you work safely close to such pipelines — please contact in writing:

National Grid UK Transmission
Transmission Enquiries Team
National Grid House
Land and Development (B1)
Warwick Technology Park
Gallows Hill
Warwick CV34 6DA

Or call the Transmission Enquiries team on the FREEPHONE **0800 731 2961**.

2) Until last year, National Grid also owned the gas distribution network across mainland Britain. But in April 2005, it sold off four parts of this network, retaining only the local gas distribution network covering the North West, West Midlands, East of England and North London.

Now five separate gas distribution network companies own the **gas distribution pipeline network** — and they may ALSO be directly affected by the work you are considering



or intending to undertake on your land. Depending on where you are in England, Wales or Scotland, you should also contact the appropriate gas distribution network company.

North West, West Midlands, East of England and North London

National Grid UK Gas
Distribution

Plant Protection Team
National Grid
Lakeside House
The Lakes
Bedford Road
Northampton NN4 7HD
01604 815 361

Fax: 01604 816121

Email:

plantprotection@uk.ngrid.com
Enquiries in writing where possible.

Scotland

Scotland Gas Networks
Plant Location Department
95 Kilbirnie Street
Glasgow G5 8JD
0141 418 4093

Northern and North East

Northern Gas Networks
1st Floor, 1 Emperor Way
Doxford International
Business Park
Sunderland
SR3 3XR
0191 501 4349

North Wales, South Wales, South West

Wales and the West Utilities Ltd
Plant Protection Team,
Wales and the West House,
Spooner Close,
Celtic Springs,
Coedkernew,
Newport.
NP10 8SZ
02920 278912

Southern and South East

Southern Gas Networks
Plant Protection Team
2 Leasons Hill
Orpington
Kent BR5 2TN
01689 881 454



To report a gas escape or emergency or if a pipeline is damaged, even slightly (even if no gas leak has occurred), please call the gas emergency service which operates 24-hours-a-day on **0800 111 999**.

Bringing the Olympics to London is a massive undertaking for countless people, organisations and companies — including National Grid. With the countdown ticking away to 2012, preparations are forging ahead and National Grid is working closely with other parties to ensure a successful Olympic and Paralympic Games — the first staged in the UK since 1948.

We dig deep for Olympics

NATIONAL GRID VERY rarely puts its electricity transmission cables underground.

It's only done for reasons of national importance — such as the Olympics, which, it is hoped, will accelerate London's expansion eastwards to accommodate the expected population growth in the capital over the coming decades.

National Grid has joined forces with the London Development Agency (LDA), the Olympic Delivery Authority (ODA) and distribution network operator EDF Energy to upgrade and reconfigure the existing electricity and gas networks to deliver power to the London Olympics. It is being project-managed on behalf of the LDA by Arup.

The scheme — kickstarted by the Culture, Media and Sport Secretary Tessa Jowell when

she visited the Olympic Park site in April to launch the ODA — is being funded by the government. The budget is around £200 million. It involves the dismantling of 52 pylons — 27 owned by National Grid — and the installation and commissioning of two 6.7km cables by National Grid under the Lower Lea Valley in East London.

The first stage of the scheme is the construction of two cable tunnels for National Grid and EDF Energy, a condition for London hosting the Games. The tunnels — the larger is for National Grid — will underground their overhead lines which currently span a 6.7-kilometre route from Hackney to West Ham substations.

National Grid's project director for the work is Geoff Singleton who is working closely with the project partners.

"Tunnelling from the maintenance shaft sunk at Carpenters Road, about halfway between Hackney and West Ham, has started in one direction using a Canadian-made tunnel boring machine (TBM) — nicknamed Lucille," explained Geoff.

"Work is progressing well and a second TBM — called Sonia — has arrived on site from Canada ready to start boring in the opposite direction. Work on the second tunnel for



FACTFILE

- The tunnels will be 3m to 4.5m in diameter, both requiring sophisticated ventilation, and lined with 11,000 concrete rings fitted with gaskets to ensure they are watertight
- 250,000 cubic metres of spoil will be produced by the tunnelling process, which will be re-used to construct the Olympic Park
- Machines and workers will access the tunnelling constructions via 10 shafts, up to 40m below ground and up to 15m in diameter
- The work being undertaken will help manage the future electrical supply requirements of the Olympic Games and Paralympic Games and, in legacy, East London.

lo res scan need original from NG



A computer-generated image of what the Olympic park will look like

Leading a project of national importance... Jeff Singleton on the Olympic site

EDF is on a slightly different timescale.

"The overhead lines that we have to dismantle once the new underground cables are commissioned at the end of 2008, cross a mixture of land — from green parkland, roads and waterways to industrial land,

some residential housing, and a vast amount of railway networks, including Network Rail, the London Underground, CTRL and the Docklands Railway.

"Taking down overhead lines and pylons are very complex operations and we will

be working very closely with Network Rail and the other railways companies. A great deal of advance planning is necessary to ensure minimum disruption to rail services."

In a bid to allow earlier



Powering up for the future

continued from page 5

construction of the Olympic Village, National Grid has proposed temporarily diverting the existing overhead line across four sections to bring power to the site, said Geoff.

"In conjunction with EDF, we are also looking at the energy requirements for the future in the area. Not just the Olympic Village, but areas of anticipated economic development that will require a reinforcement of supply. In addition, we are looking at the impact on the gas distribution network."

South East wayleave officer Brian Mead has the job of liaising with many grantors and members of the public affected by the proposed work. He has worked for the electricity industry for 36 years, and in wayleaves for 22 years — one of his last major wayleave projects was the £200m London Connection scheme to reinforce electricity supplies to the capital.

His current priority, he says, is to secure wayleaves for the overhead line and liaise with grantors who may be

affected with the overhead line diversion scheduled to start next July.

"The majority of the other work — removing the overhead line between Hackney and West Ham — will involve close liaison with local authorities, Highways, the police and members of the public," said Brian.

"I very much look forward to the challenges presented by such an important scheme."

National Grid's efforts to date have been commended by the LDA. Project Director Terry McDonald, said: "National Grid's ability to supply innovative solutions to a range of challenges has proved invaluable in helping us to meet the ambitious timescales for this world-class event."

Geoff says the work in the Lower Lea Valley is an exciting challenge for National Grid, and for himself. "For me the priority is making sure that that the Government understands that we are working to very tight timescales and that the right decisions have to be made at the right time to ensure the success of the project."



For many decades many people have identified the Lower Lea Valley with large pylons and power lines and burying them underground unlocks this precious space enabling us to deliver a lasting legacy of thousands of new homes for Londoners, many of which will be affordable.... Ken Livingstone, Mayor of London



Setting-up the tunnel boring machine continues at the drive shaft

Picture: Arup

Oz wizard Geoff tackles Olympics

GEOFF SINGLETON KNOWS all about demanding and complex work challenges — he has survived quite a few over the years since joining the Central Electricity Generating Board as an engineering assistant in 1975.

A former National Grid Midlands area manager, he has been involved in a number of major projects including the £79 million Five Centre Project to provide a new energy management system to manage and control the electricity grid. This scheme brought National Grid's national control — the nerve centre of the electricity supply industry in England and Wales — to Wokingham in 1993.

Geoff spent several years as an applications design manager with Project Management before tackling the biggest challenge of his career to date — "even bigger than the Olympic project," he said.

He worked Down Under

from 2000 to 2003 as National Grid's Basslink chief executive after the company won the bid to build, own and operate the £300m submarine interconnector across the Bass Straits — the first electricity link between Tasmania and Victoria in mainland Australia.

"There were a number of objections to the original route in Victoria, so we redesigned it and completed National Grid's biggest environmental impact assessment statement — it ran to 5,000 pages, with the guidance notes alone taking up 170 pages.

"We finally agreed a route for the overhead line in Victoria which passed within one kilometre of just 19 properties

FACTFILE

- The Lower Lea Valley, just three miles from Central London, is the largest remaining regeneration opportunity in inner London. It runs north-south from Stratford to Canary Wharf and covers an area of around 1,500 acres
- The area is characterised by a large area of derelict industrial land as well as poor housing. Much of the land is fragmented and divided by waterways, overhead pylons, roads, the London Underground Network and heavy rail lines
- It is one of the most deprived communities in the UK — unemployment is running at 35 per cent on some estates, and skills levels are low
- The Olympic Games will bring many new opportunities for local people and businesses. Thousands of new homes will be created — 9,000 in the Olympic Park alone. New schools, family health services and other community facilities will also be built
- The Games will create the largest new park in London since Victorian times. It will be as big as Hyde Park and would double the amount of green space currently in the Lower Lea Valley.

instead of the 115 properties under the original plan."

Geoff liaised closely with the Victoria and Tasmania state governments, and the federal government. "It was a long, and difficult haul," he said. After gaining the green light from all three governments, and setting construction contractors, engineering and procurement services in place to take the project forward, Geoff returned to the UK. As he embarks on the Olympic project, his Australian challenge has come to fruition — the interconnector was commissioned earlier this year.

Miller John Martin fell on his feet when he married Elizabeth, the boss's daughter, in 1788. For when her father William Needham died 10 years later, the tenancy of Scarthingmoor Water Mill was transferred to her. So began the Martin dynasty — eight generations later, there are still Martins at Scarthingmoor Mill in Weston, Nottinghamshire, National Grid grantor Stuart Martin and his wife Margaret and their sons Tim, 15, and Sam, 13. And the mill is still working...



Scarthingmoor Mill in 1877. The old mill burnt down and was replaced by the present one built in 1897. Pictured left to right: Stuart's grandfather Tom, great-grandfather Thomas (born 1832) and great-grandmother Elizabeth

Mill more than just a memory

THE DOMESDAY BOOK of 1086 records a water mill at Weston. Whether it was at the site of Scarthingmoor Mill is unknown, says Stuart, for all traces of original mills in Weston have been lost in rebuilding. "However, for a long time, the mill was owned by the Earl Manvers estate. It was a prosperous business with, in 1768, some 165 customers on its books. "A ledger in the family

archives reveals that turnover in 1780 was around £700, which must have been rather good for the times."

Until 1930, generations of the Martin family were Scarthingmoor Mill tenants. "Then my grandfather Thomas bought it from the estate in 1930 and it has been owned by the family ever since."

Water power reigned for another 20 years or so until it was superseded by electricity. "I was only three when the water wheel was last used in 1953, but I can still remember it in action," said Stuart.

Electricity allowed the mill to work 10 times faster than the old water mill. "And just by pushing a button!" said Stuart. "Before, it often took two days to get a head of water, and then the mill could only operate for two or three hours at a time."

The milling business dwindled as local farms got their own small electric mills



Scarthingmoor Mill today



Stuart Martin working at the mill

and did their own milling. In 1939, 44 customers still used the mill for grinding — by 1956 when the business ceased, there were only four.

Diversification in farming may be the "in" phrase today — but the Martins, like many farming families, have been doing it for years.

"When the milling business ended, the family bought more land, giving us 140 acres, and started dairy farming. That



The Martins: Tim, Stuart, Margaret and Sam

lasted until the early 1960s when we went into pigs. When prices dropped, pigs were no longer viable and so we increased our beef herd to 60, including suckler cows, and continued to grow wheat, barley and rape." The water wheel has been still and silent for over half a century. But the mill, often admired by visiting enthusiasts, has not disappeared into the mists of time — Stuart still uses it to mill his own animal feed.

"I have thoroughly enjoyed my life here," said Stuart. "But there are some small regrets. I left school, went to agricultural college and came straight back

Wheel of destiny

It is thought there are at least 20,000 disused mill sites in the UK — some people believe this is a vast untapped potential to harness river and stream power to help meet Government renewable energy targets.

For a final year project at Sheffield University, student Greg Wood explored the issue at Scarthingmoor Mill.

Stuart Martin said: "Greg made a very small water turbine to see how much electricity he could generate.

"He got up to 1,600 rpm. Had it been a bit bigger, it would have produced enough electricity to power four light bulbs. Hopefully another student will take the project further next year."

FACTFILE

- Watermills are thought to have been introduced into the British Isles by the Romans
- The Domesday survey records that of the 9,250 manors mentioned, 3,463 had 5,624 mills
- During the medieval period, thousands were built across England and Wales
- The first mills had stone foundations but were of wattle and daub, timber and thatch; many mills burnt down, the friction caused by wooden machinery igniting explosive flour dust
- By 1800 mills were powering a wide range of machinery — there were fulling (part of the cloth manufacturing process) and saw mills, and some which powered looms
- According to the Society for the Protection of Ancient Buildings, fewer than 60 mills were working commercially in the UK in 1997; at the start of the century there had been 15,000
- The walls of Scarthingmoor Mill — rebuilt after a fire in 1897 — are 24 inches thick at the base and just nine inches at the top. The building has to support the enormous weight of the cereals pulled by heavy chains to the top of the building before being emptied into a hopper ready for milling.

here. Sometimes I wish I had seen a little bit more before settling down.

"My son Sam is a real countryman and Tim is into mechanics. I hope they go off and explore more than I did — but I also hope Scarthingmoor Mill will provide them with a base and a future when they are ready."

• The farm is crossed by the High Marnham Chesterfield overhead line which is being refurbished.

Gas pipeline work starts

New supplies of natural gas from fields off the Norwegian coast are due to arrive in Britain from 2007. To enable National Grid to distribute the gas around the country, two major pipelines are being built in the north.

TWO MAJOR PIPELINES are being built in the north of England to distribute natural gas from Norway.

Engineers have started to lay the first sections of the high pressure gas transmission pipelines, one running for 53km between Ganstead and Asselby in Yorkshire, and the other 94km from Pannal in Yorkshire across to Nether Kellet in Lancashire.

The new pipelines will eventually be two of four that will link up to carry gas from a terminal at Easington on the Yorkshire coast across to the north west. It will be capable of carrying 20 per cent of the UK's gas requirements.

The gas will come from the Ormen Lange gas field off the coast of Norway — the third largest exporter of natural gas behind Russia and Canada —

via the world's longest sub-sea pipeline. The southern part of the 1,200km Langeled pipe was completed at the end of last year.

When production from the Ormen Lange field starts in 2007, up to 72 million cubic metres of gas, a volume comparable to Norway's entire daily energy consumption, will flow into Easington each day.

National Grid's Nether Kellet to Pannal high pressure gas pipeline is being built by Entrepose IS, the British subsidiary of the French group Entrepose Contracting. Work is taking place over two construction seasons between April and October this year and 2007. The entire length of the Ganstead to Asselby pipeline is being built this year by Murphy Pipelines Limited.

Phillip Knipe, National Grid



Skipton Pipeline 026 - pic requested from Jason Broadhurst and update front page ref

caption

project manager for the Nether Kellet to Pannal pipeline, said: "Once all four sections of the new pipeline are completed, they will connect the two main north-south gas transmission pipelines running from Scotland down each side of the country, allowing us to move the imported gas from Norway to areas of the UK where it is most needed."

In planning the construction of the pipeline, a detailed Environmental Impact Assessment was carried out by environmental conservation and archaeological specialists. "Once the pipeline is in the ground," said Phillip, "we will be paying particular attention to restoring the natural landscape to its former appearance —

returning the topsoil, replanting hedgerows and restoring dry stone wall. Within a matter of months, the signs of our presence will start to disappear and by next summer, the path taken by the pipeline will be extremely difficult to pick out.

"Obviously, while work is under way, there will be disruption to local people, but we will do everything within our power to keep this to a minimum."

Agricultural liaison officer Watty Trayner has the task of liaising with hundreds of grantors affected by the pipeline route, which covers areas of hillside, moorland and old pasture land.

Nether Kellet to Pannal pipeline



We will be paying particular attention to restoring the natural landscape to its former appearance
Phillip Knipe

FACTFILE

- National Grid owns and operates over 6,800km of high-pressure gas transmission pipeline across Britain and 132,000km of lower-pressure distribution gas mains in the North West, the Midlands, East Anglia and North London. This represents more than half of Britain's gas transportation network, delivering gas to around 11 million homes, offices and factories
- In all, 5,510 sections of steel pipe with a diameter of 1,220 mm (48 inches) will be welded together to form the Nether Kellet to Pannal pipeline
- During the construction of the new pipeline, there will be an increase in the movement of heavy vehicles on local roads. A telephone hotline has been set up on **0800 652 8081** for people who have questions about the pipeline.

Winds of change

MORE THAN 1,500 onshore wind turbines have the capacity to produce more than 1,500MW of electrical power in the UK at present, enough to supply about 845,000 homes.

That's just one per cent of the UK electricity — and yet the UK has the greatest wind resource in Europe. Some countries in Europe already generate as much as 20 per cent of their electricity from wind farms.

Wind has been the world's fastest growing renewable energy source for the past seven years and this trend, says the British Wind Energy Association (BWEA) is expected to continue with falling costs of wind energy and the urgent international need to tackle CO₂ emissions to halt climate change.

A number of National Grid grantors have expressed an interest in installing their own wind turbines — and have asked about selling power to the national grid.

"If you want to build a small wind turbine — or photovoltaics, small water turbines etc — and sell the excess power, you are basically in the same position as any other generator in that you will need to find a supplier, one of the companies who sell electricity to the end consumer, who is willing to buy your spare electricity from you," said Hector Pearson, National Grid's land and development group manager.

"Unfortunately, we do not have information on which suppliers do buy power from small scale/domestic renewable sources — or what rates they offer — and cannot offer technical advice on how to go about developing a project. But

there are organisations who may be able to help, and we have given contact details here."

BWEA says that most of the utilities are now set up to do this, and the results of the Government's Energy Review and Climate Change Bill* will make it easier for householders and communities to get involved in generating their own electricity.

- **BWEA** — the leading renewable energy trade association in the UK — was formed in 1978. For more information, visit www.bwea.com/small or call 020 7689 1960.

- **The Renewable Energy Association** represents renewable energy producers and promotes the use of sustainable energy in the UK. For more information, call 020 7747 1830 or visit www.r-p-a.org.uk

- **The DTI's Low Carbon Building Programme** provides grants for microgeneration technologies to householders, community organisations, schools, the public and not for profit sector and private businesses. Tel 0800 915 0990, visit www.lowcarbonbuildings.org.uk

- **Centre for Alternative Technology** runs a free information service, answering enquiries on a wide range of topics, including renewable energy. Tel 01654 705950. Visit www.cat.org.uk

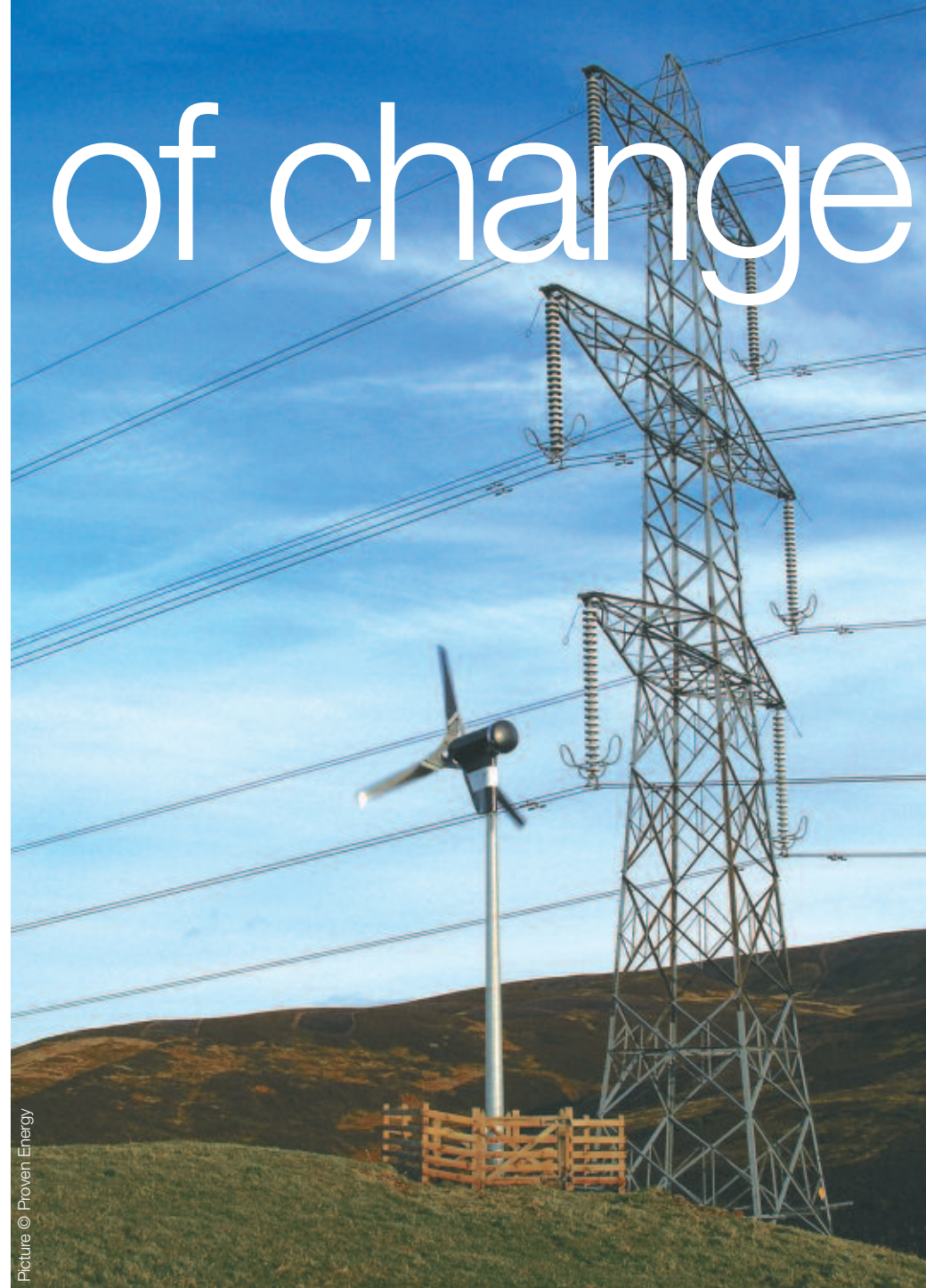
* This summer saw the Climate Change and Sustainable Energy Bill receive the Royal Assent.

This is a huge boost to the new microgeneration sector because it will prioritise policy measures to support consumer-based

microgeneration and breakdown many of the barriers facing uptake of the sector.

For more information on the Government's Microgeneration Strategy consultation, visit www.dti.gov.uk/energy/energy-sources/sustainable/microgeneration/microgen-strategy/page27594.htm

- **Good Energy** operates



Picture © Proven Energy

Linesmen have high hopes for new pladder



The pladder in action

The pladder — a new platform ladder — is helping to minimise land damage when linesmen have to work on grantors' land.

The pladder has been designed and developed by National Grid overhead line development engineer Martin Wilson over the past 18 months.

"It's a lightweight amalgamation of a 19-metre access platform and a ladder used mainly when tension insulators are being replaced," he said.

A platform and its associated equipment, including two one-ton concrete blocks, weighs up to 3.5 ton and needs to be delivered to site with an HGV, possibly creating problems. The ladder is not the preferred technique in terms of safe access or comfort.

"The pladder on the other hand comes with its own purpose-built lightweight trailer which can be hitched up to vehicles and towed to the tower base," said Martin. "It weighs just 100 to 110 kg and can be assembled on site in just 15 or 20 minutes using a pair of stands which are stored in the trailer."

Two vehicle-mounted capstan winches are required to lift the pladder into position so there needs to be two vehicles at the base of the tower.

"As well as being used for replacing either quad or twin insulators, the pladder will undergo further development so it can also be used on suspension towers when HSU suspension clamps are being fitted," said Martin. "It may also be considered suitable for use for other tasks, in the interests of safety."

Wayleave officers have welcomed the new pladder. "We can reduce land damage because of the lightweight equipment and a significant reduction in the number and size of vehicles on site," said Bob Tute, wayleave warden (Central Patch 4). "So it's good news for grantors."

Twelve pladders are now being used by overhead line teams around the country.

Home Generation and Smartgen that is being introduced this year.

Good Energy's award-winning **Home Generation** scheme pays homes and businesses using microgeneration for every unit of electricity they produce, even the ones they use on site. For more information visit www.good-energy.co.uk

Gridline would like to hear from grantors who have installed wind turbines.

Contact details are at the bottom of page 2

Farmers in Wales who have taken the green environmental message to heart have had their hard work officially recognised

OUTSTANDING contributions to environmentally-sensitive farming in Wales have been honoured by a prestigious agri-environment award scheme.

The scheme, run jointly by the Countryside Council for Wales (CCW) and the Royal Welsh Agricultural Society (RWAS) with support from the Wales Young Farmers Club, was sponsored by National Grid for the first time. The company stepped in to ensure the immediate future of the scheme that has been running for around five years.

The 2006 awards attracted 46 entries and the winners were presented with prizes totalling £7,500 by RWAS president Hywel D Lloyd at the Royal Welsh Show at Builth Wells.

The judges were National Grid land and development officer Richard Evans, Peter Smith from the YFC, Llewellyn Evans from the RWAS and the CCW's chairman John Lloyd Jones.

National Grid's group corporate responsibility director Gareth Llewellyn said: "We operate the country's essential electricity and gas transmission lines and always aim to protect and enhance the environment when we work on land; the Agri-Environment Awards support this principle."

The winners

- Innovation, integration and adaptability to balancing good farming products within an environmental framework and providing access and educational opportunities alongside the urban fringe.

This, say the judges, won the Davies farming partnership the



The winners with their trophies at the Royal Welsh Show

2006 Farmers Award. It was the first time they had entered the competition.

The partnership — Peter Davies, his wife Rosamund and father Walter — farms at Slade Farm, Southerndown in the Vale of Glamorgan, and at three other smaller outlying parcels of land including the parkland at St Fagans Parkland on the outskirts of Cardiff.

The family has been at Slade — a beef, sheep and arable rotation crop farm — for 30 years and in 1999 converted to organic production. This, together with Tir Gofal — the whole farm agri-environment scheme — ensures that the best environmental practices operate within the holding.

Slade Farm provides a

discretionary access which is heavily used within the Heritage Coast Outreach Programme for Schools.

"St Fagans Parkland is run in a very different way to the farm. It's the home of St Fagans National History Museum, one of Europe's foremost open-air museums and the most popular heritage attraction in Wales. We are developing the traditional parkland habitat, incorporating hay meadows with the management of cows with calves at foot."

- Mark Williams, 30, from Monmouthshire — winner of the **Young Farmer Award** — travelled the world after graduating with a Diploma in Agriculture from Usk College.

He spent time working in

Australia and New Zealand where he was interested in sheep farming methods and undertook sheep shearing, returning to Wales to join his parents Glyn and Jill at Tump Farm in Llantrisant, Usk, six years ago. The family raise a beef herd and sheep on 230 hectares of land. Since his return, Mark has fused practical conservation with practical farming, in an area, said the judges, which is becoming increasingly dominated by non-farming influences who are buying up land and farmhouses.

- The Environment Agency was impressed when it saw the quality of the fencing being carried out by Bryn Llewelyn Hughes at his family farm in Gwyneidd.

They asked him to tender for some of their fencing... and so

began a success story that has won Bryn the £2,000 prize in the **Contractor/Supplier** category.

Bryn, 41, has developed a fencing and plant hire business employing two local men full-time, and two part-time, who work throughout most of north Wales. Bryn lives with his wife Glenda and three children at Ffridd Nantlle, a 405-hectare (1,000-acre) hill farm near Caernarfon.

The awards judges said that Bryn's business was a "wonderful example of how to grow a diversified business alongside an expanding farming enterprise".

They were impressed by the integration of the contracting business with the farming enterprise, especially during busy farming times.

Grantors drop in for a chat

Nice to see you — to see you nice!

National Grid's 2006 agricultural show is almost over. The company has already welcomed more than 1,000 grantors and guests for lunch. Once again, they have included both electricity and gas grantors.

Feedback has been excellent, with menus, quality of food, speed of service, friendliness of staff and cleanliness very largely judged as excellent or good.

"Unfortunately we cannot offer lunch to as many grantors as we would like — we have to restrict invitations to those directly affected by major works," said Alan Naylor, National Grid's field wayleave manager.

"However, refreshments are freely available up to 11.15am and again after 3.30pm to anyone making good use of their Grantors' Club badge."

The final show will be the National Ploughing Championships in Guildford on October 14.



A fantastic day and very well looked after.

A most enjoyable and refreshing break.

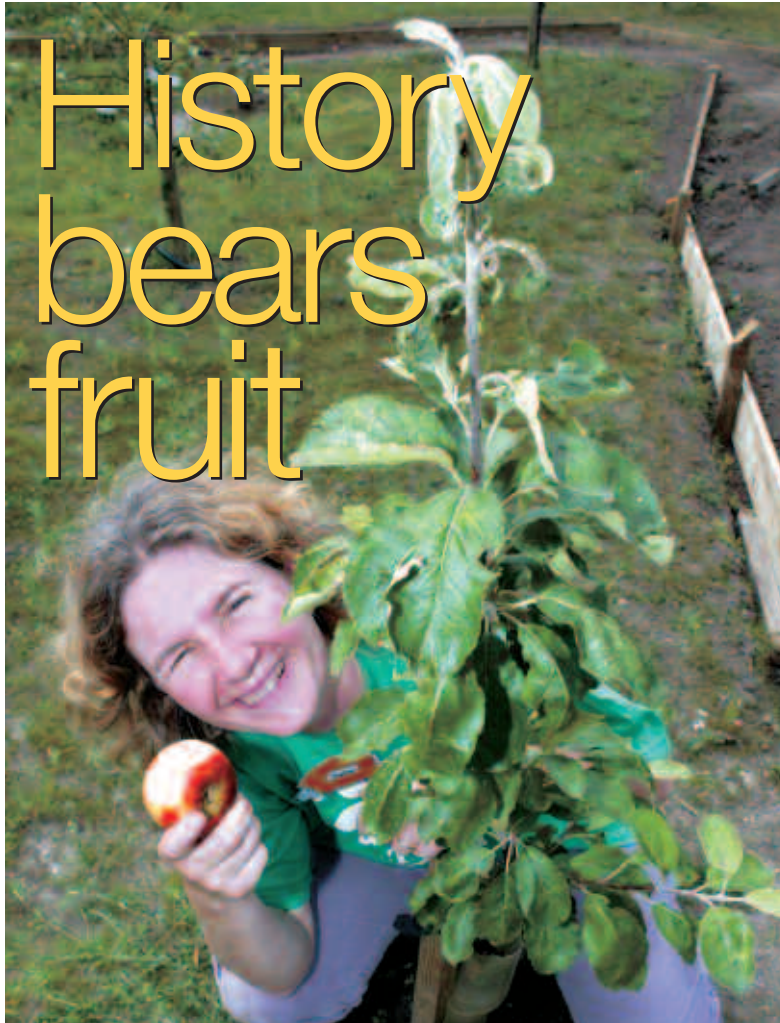
Superb food, very good service and so friendly, many thanks.

First class hospitality.

A real pleasure to visit you.

National Grid works closely with partner organisations to support six environmental education centres around the country. They are centres of excellence that are primarily geared to provide outdoor education for children, offering imaginative activities designed to support key National Curriculum targets. Increasingly, they are used for non-school environmental education, life-long learning and environmental training for local business. Outreach programmes tackling waste minimisation and energy efficiency issues are also delivered from centres.

The environment centres help to meet National Grid's commitment to operating as a socially and environmentally responsible business, through mitigating the impact of substations on rural environments.



Project officer Julie Howarth Pulleyn with the descendant of Newton's tree

A DIRECT descendant of the famous apple tree under which Isaac Newton sat when he discovered gravity has been planted in a new fruit orchard at Skelton Grange environment centre in Leeds.

The orchard has been established to celebrate the successful 10-year partnership between BTCV, National Grid and Leeds City Council which has nurtured Skelton Grange's reputation as a centre for excellence and innovation in environmental education.

The centre had humble beginnings in the early 1990s in a Portakabin on a bare patch of land close to Skelton Grange substation. National Grid stepped in to support the

centre in 1995 and later kick-started the funding for a new £600,000 state-of-the-art centre which opened in 2003.

The award-winning eco-centre has attracted more than 80,000 visitors since its inception.

Centre manager Caroline Crossley said: "The team at Skelton Grange wanted to take this opportunity to thank not only its partners BTCV and National Grid, but also valuable supporters like Leeds City Council, the Big Lottery, WREN, Yorkshire Water — which has funded the orchard — Groundwork Leeds, Leeds Environmental Design Associates (LEDA) and HSBC, who have all uniquely contributed to the centre."

Time to take a breath

Canterbury Environmental Education Centre staged a family day as part of a series of nationwide events connected to a BBC nature project.

The events were held to kickstart the BBC Breathing Places scheme and to mark the return of Springwatch to BBC2.

The Make a Place for Nature event attracted more than 200 people of all ages. Environmental activities were on show and visitors could learn new skills and get involved in volunteering. They were welcomed by centre head Louis Grover.

National Grid supported the day, and Peter Graves from Canterbury North substation was present. Visit www.naturegrid.org.uk for more information.



Creating a masterpiece at Bishops Wood

Bishops Wood has the art of success

A weekend of art has won Bishops Wood Centre in Worcestershire an award for the promotion of environmental art.

The "Family Big Draw Weekend" during last year's Big Draw — a national event aimed at encouraging the public to get involved with the arts — attracted more than 1,000 visitors.

The success of the event earned the centre an Inspired by Heritage Award and a £500 cheque which were presented to staff by illustrator and artist Quentin Blake at a ceremony at the British Museum.

It's the second time that Bishops Wood has scooped an award in The Big Draw — last year it received the Drawing Inspiration Heritage Award in recognition of the originality and variety of its creative activities.

During the "Family Big Draw Weekend", visitors could

draw with grass, make sensory mobiles from natural materials and even create a woodland from recycled and natural materials. There were music workshops — using instruments made from recycled materials — and adults threw themselves into mark-making with mud and clay to produce life-size body prints.

The event was organised by Jon Cree, the centre's education and training officer, and Marian Gager, primary arts adviser for Worcestershire LEA, one of National Grid's partners at Bishops Wood.

"We were delighted that our work was recognised again," said Jon. "One of the huge successes of the event was seeing families taking time to share their inspiration from the woods around the centre."

For more information visit www.bishopswoodcentre.org.uk.



Keeping trees in line

When trees grow too near to power lines they have to be cut back. Across the nation, that's a huge task – here's how National Grid manages it...

NETWORK RELIABILITY and safety to the public are two things National Grid must consider when operating and maintaining its network.

Managing vegetation underneath overhead power lines is an ongoing activity across National Grid's network.

"If a tree branch gets too close to a high voltage power line, the electrical current can 'arc' across from the line to the branch leading to a flashover – potentially causing loss of supply, a fire in the tree or the tree conducting electricity to the ground," said Aileen Smith, National Grid land and development officer.

"That's why we have a statutory duty to manage vegetation near our lines.

"Minimum statutory safety clearances between overhead power lines and objects such as trees are set by the Energy Networks Association to ensure safety to the public.

"National Grid's vegetation management programme ensures that these statutory clearances are not infringed; our contractors are required to remove vegetation to the specified safety clearance plus an estimated three years' vegetation growth.

"National Grid always seeks to agree vegetation management work with its grantors, but where works cannot be agreed and the vegetation in question poses a danger to the public and operation of its equipment, the

company must use compulsory powers under the Electricity Act 1989 to undertake vegetation management works.

"We undertake regular assessments of the likely danger to the electricity transmission system and the public arising from overhead power lines near to trees. Where woody vegetation is found to infringe statutory safety clearances then it must be cut and/or removed so that reasonable growth and safe access for future works can be achieved without returning every year to the same site," said Aileen.

"National Grid cannot prevent trees and vegetation being planted beneath its overhead lines unless this is specified on your wayleave or easement. But to eliminate future safety problems, and to reduce the need for significant ongoing tree management work, only low-height, slow-growing species should be planted beneath overhead power line conductors and towers.

"Please talk to your local wayleave officer if you need advice on what is safe to plant.

"Similarly, when planting is proposed very near pylons, consideration should be given to the need to maintain access to the pylon base and so that overhead line maintenance activities can be carried out safely and without causing damage to habitats and landscapes."



The contractor...

Earlier this year, National Grid awarded fountains – the UK's leading environmental services company – a five-year contract for all vegetation management work along its electricity network in England and Wales. In conjunction with the company, fountains will undertake a rolling national survey of the entire overhead network and prioritise work programmes.

Neil Blake from fountains is the operations manager for the National Grid contract.

He said: "The cutting programme that has been agreed will, over the contract period, reduce the need for outage requests and method statements to carry out vegetation management operations.

"A key feature of the contract is to continue the management of grantor requirements and third party interests to facilitate the vegetation management programme.

"Investment has been made in heavy duty ground flailing equipment to clear dense woodland spans. The medium to long term objective is to create a low-growing, native shrub layer which will pose a much reduced risk to the overhead network."

...and how to help

- All vegetation clearance work MUST be carried out by trained staff. You must not undertake any arboricultural pruning or dismantling work if any part of the tree is or can come within 15m of the overhead power line without talking first to National Grid.
- Landowners are asked for permission to cut woody vegetation back to about eight metres from the overhead line which provides the statutory clearance plus three years' average growth.
- Before ANY planting is proposed beneath the overhead line or within 2m of a tower bases, please contact your local wayleave officer for advice and guidance.
- Trees should not be planted directly over or within three metres (10 feet) of a National Grid high voltage underground electricity cable
- For more information, please contact your local wayleave officer, or the transmission enquiries team on **0800 731 2961**. You can also visit the land and development section of the National Grid website, www.national-grid.com

FACTFILE

- In August 1996, there was an electricity blackout to an estimated four million customers in nine of the USA's western states
- In August 2003, the USA suffered its largest power blackout in history – it left more than 50 million people across the north eastern United States and Ontario without power
- In September 2003, a nationwide power blackout affected nearly the whole Italian population of 57 million people. It was the worst power failure since the Second World War
- TREES WERE A CONTRIBUTORY FACTOR IN ALL THESE BLACKOUTS... in the 1996 incident, a high-voltage line sagged into a tree in Oregon, while the August 2003 blackout began when three high-voltage lines short-circuited when they came into contact with trees that were too close to the lines. In the Italian incident, it's believed that storms may have tossed a tree branch on to power lines in Switzerland, starting a chain reaction.



A low-growth shrub corridor in Massachusetts, USA...



...and one in the UK

Corridors keep lines clear

Vegetation management techniques used by National Grid in the USA* have been introduced in England and Wales.

It's part of the company's commitment to ensuring that safety clearance under overhead lines is managed in an environmentally-friendly way.

"Traditionally, as trees have grown and reached the safety zone of the overhead lines, they have been pruned and felled," said Doug Lockwood, National Grid's vegetation contract manager. "This is essential to maintain clearances and prevent faults.

"But the technique used in the USA for 40 years, means that the amount of felling work required in the future may be reduced. It's known as Integrated Vegetation Management (IVM) and involves the careful and selected use of herbicide to prevent re-growth of tall fast growing species. We tested the process here involving 100 sites across England and Wales, including a number of sites within SSSIs with the agreement

In the US, corridors of low-growing shrubs beneath power lines have made maintenance easier. Now the practice is being introduced over here...

of English Nature in a bid to re-establish heather heathland.

"The aim of IVM is to establish a low-growing shrub, herb and grass layer in the area underneath the overhead lines. Fast growing wood species such as birch and ash are controlled by spot applications of herbicide. After clearance, sites may need to be visited once a year, but once the low-growing shrub area is established, visits may be extended to just once every five years."

The IVM techniques have a number of advantages for the grantor and the environment:

- extended maintenance cycles will mean less disruption to grantors
- the visual impact of maintenance work is minimised
- herbicide applications do not disturb wildlife and birds, particularly during the bird-nesting season
- reduced requirements to fell large trees once the low-growing shrub layer has been established

Doug is involved in another vegetation management issue — sidescreen trees, those trees next to overhead lines which could cause problems if they fell on to the lines, in a storm for example.

"I spent a few days with National Grid in Massachusetts exploring best practice in the management of these side screen trees and hope to visit Scandinavia later in the year to see how they deal with the problem," said Doug.

"It's a very important issue. New legislation is being introduced in the UK in 2011 to

manage these side screen trees. They will have to be identified, risk assessed — and cut down if considered a risk. So it's important that we work with grantors now to deal with the impact of the new legislation."

* National Grid US is one of the 10 largest electric utilities (by customers) in the US. It operates an electricity transmission network of about 14,000 miles, including approximately 9,000 miles of overhead lines.



Doug Lockwood



Sidescreen trees being controlled in Massachusetts

Harvest seeds and plant trees of the future

The Tree Council is planning its first month-long Seed Gathering Season.

It builds on the success of Seed Gathering Sunday which has been celebrated since 1998 when Tree Wardens helped to pilot the idea.

Seed Gathering Season kicks off on September 23 — the autumn equinox — and runs until October 23. The aim is to celebrate trees for the seeds, nuts and fruits that can be collected to grow the trees of the future or to turn into delicious jams or pies.

People can take part in the events, from guided walks to workshops and other activities, being planned by Tree Council member organisations, its volunteer Tree Wardens and other supporters, or simply go for a walk in local woods or park to collect seeds.

Seed collecting will be the focus for activity in the BBC's *Autumnwatch**, particularly over the weekend of October 7-8 to tie in with Seed Gathering Season.

A whole range of trees produce fruit during Seed Gathering Season and The Tree Council hopes that its festival will encourage people to gather or buy the fruit and then use it. By doing this they will help ensure the survival of local varieties and orchards and the wildlife they sustain.

The Tree Council's director-general Pauline Buchanan Black said: "The festival theme is Trees Matter — Make the Most of Them, and we hope many people will collect seeds from trees in their local patch.

"It's important to remember, however, that they should first identify places that actually need trees BEFORE starting to gather any seeds for new trees. It may be the home, school, workplace or wider neighbourhood. It's also important to pick the right tree for the right place."

● *The Good Seed Guide* — a useful booklet about collecting seeds and growing trees, with identification details for 46 common species — is available for £3.50 (including postage and packing) from The Tree Council, 71 Newcomen Street, London SE1 1YT. Tel: 020 7407 9992.

Information about Seed Gathering Seasons events and tips is on the Tree Council website www.treecouncil.org.uk.

* More information on the Tree Council website or www.bbc.co.uk/breathingplaces

Enter our competition and win a Tree Council book. See page 24.



Cash on time every time

Administrators Helen Metcalfe (left) and Jackie Wilkie, making sure the payments go out correctly

A TEAM OF just six administrators ensures that thousands of National Grid electricity grantors receive their appropriate wayleave payments.

Helen Metcalfe and Jackie Wilkie at National Grid HQ in Warwick manage the automated payment run five times a year and they work closely with four administrators based in Rayleigh, Bristol and Leeds.

Maureen Bright (South East), Mary Lawson (South West) and Sharon Naylor and Julie Smith in the North, manage the grantor database and helpline number on a daily basis and make all the changes to grantor details, including names, addresses, changes in ownership of land.

"There are about 20,000 electricity grantors on our system, so we are constantly updating our database to ensure the correct grantors receive their annual

wayleave payments from National Grid for the assets on their land," said Helen. "Other grantors are on Deeds and receive no annual payment because a lump sum payment was made in exchange for the Deed."

Helen and Jackie organise five payment runs each year, four for electrical — on March 31, June 30, September 30 and December 31. "Each grantor being paid a wayleave falls within one of those pay periods," said Helen.

"The fifth pay run is managed on behalf of the telecoms company Cable and Wireless, and this is paid annually on November 30 for telecom equipment attached to our asset. It means that some grantors may have two payments a year — one from National Grid and one from Cable and Wireless."

The payment process begins

60 days before the payment due date. "Each electricity grantor due a payment is sent a statement that details their unique grantor number, name, address details, the period the payment is for and any assets associated with the payment," said Helen.

"They have five weeks to inform us if any of the details is incorrect. It really is important to have accurate information, so please do let us know if your details are incorrect so that we can amend our records.

"We have redesigned the statement and, from this September, it will include details of the grantor's local wayleave office. The grantor can then call the dedicated number 0800 389 5113 and choose the appropriate office. The wayleave administrator will direct the caller to the appropriate wayleave officer if necessary."

- The rates for electricity wayleave payments in England and Wales are agreed by the electricity companies, the Country Land and Business Association, the National Farmers' Union and the Farmers' Union of Wales. Annual payments are reviewed periodically and based upon the type and size of the structure or apparatus and typically include a payment for rent (to the landowner) and compensation to the occupier, unless the tenancy terms provide otherwise, for interference with agricultural activities.

Anyone interested in converting their wayleave to a deed should contact their local wayleave officer for further advice on 0800 389 5113. CLA members can advise on this and many other matters on the Guidance Notes on page ?? at www.cla.org.uk



The way we were...

More than 73 years ago, the Central Landowners' Association, in conjunction with the National Farmers' Union, the Land Union, and professional organisations, agreed national wayleave payments with the Central Electricity Board.

And, as our pictures show, tests were conducted to assess the time lost during ploughing around pylons. The agreed compensation and rent was featured in *The Times* on March 7, 1933.

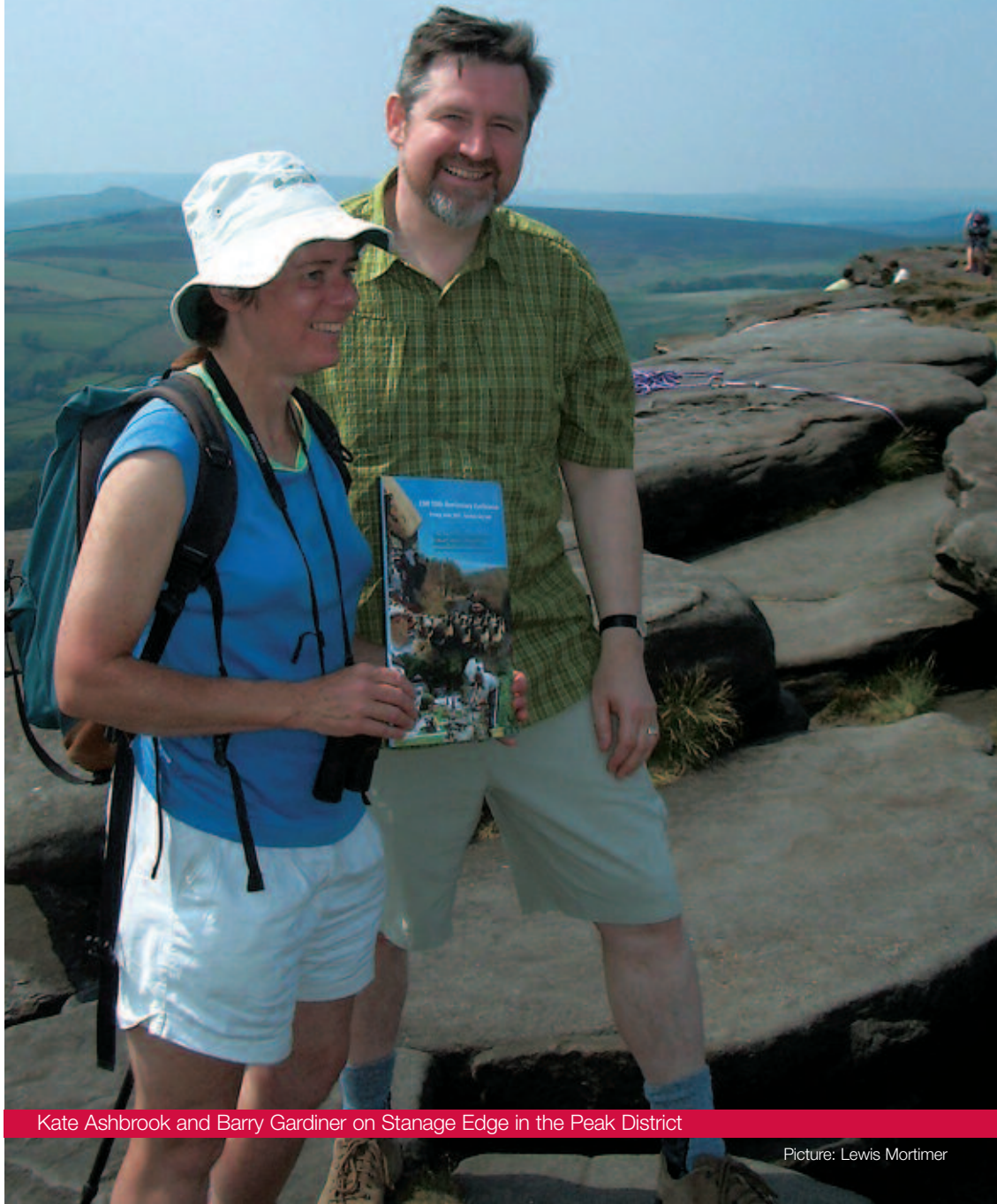
The newspaper reported that



the Central Electricity Board would pay rentals of five shillings (25p) per tower, per annum, of 15ft square or upwards, and two shillings and sixpence (12½p) per tower, per annum, under 15 ft square.



Parks important to our national life



THE NATIONAL PARKS

continue to be enormously valued by government — not just for their beauty but for the wider benefits they bring to society.

This was the message from Barry Gardiner MP, Minister for Biodiversity, Landscape and Rural Affairs, when he delivered a speech at the Council for National Parks' (CNP) 70th anniversary conference in Buxton, Derbyshire.

National Grid, one of 10 members of the Corporate Forum for National Parks*, was co-sponsor of the conference, along with the Countryside Agency.

"The National Parks have become an important element of our national life, not least in the model they offer for the sustainable development of our countryside," said the minister. "This is a key challenge for modern society in the face of growing economic, environmental and social pressures. Prosperity is about more than just wealth. We need to think about the quality of life we bring to society — whether in rural or urban areas."

The theme of the conference was "Prosperity and Protection" and it aimed to explore the relationship between National Park designation and the economy; examine issues facing National Parks in their relationship with the economy, celebrate the achievements of CNP over the last 70 years and highlight the continuing need for its work.

Some 90 delegates from around the country were welcomed by CNP chairman Kate Ashbrook. Among the speakers was Hector Pearson, National Grid's Land and Development Group manager.

Hector said that National Grid's close relationship with landowners was key to business success.

"National Grid underpins the

economy, but as our systems mature our networks do not, with notable exceptions, have an impact on the National Parks," said Hector. He explained that planning for a new gas pipeline from Milford Haven to Tirley in Gloucestershire had involved detailed consultation between National Grid and the Brecon Beacons National Park Authority. As a result, the proposed route was changed to follow a longer route around the northern edge of the park.

In his address, Barry Gardiner, a keen hill-walker and birdwatcher, commended the CNP's work to support rural communities — the 250,000 people who live in the parks — and sustainable agriculture and land use. "While agriculture remains central to the way land in the parks is managed, there is a wide range of other economic activity. The importance of this activity will continue to grow and we must be imaginative in how we ensure such activity is accommodated in the parks while remaining true to the principle on which the parks were established."

The minister also congratulated the CNP for encouraging more people to visit the countryside from largely unrepresented groups.

The conference embraced a number of field trips and workshops and ended with a gala dinner with an after dinner speech by the former Home Secretary David Blunkett.

*The Corporate Forum for

National Parks is made up of companies who recognise the value of National Parks for conservation and recreation, and who agree to uphold these values in the development and application of their policies.

National Grid welcomes the opportunity the forum gives it to improve mutual understanding between business and CNP and its partner organisations.

Did you know?

The USA's Yellowstone National Park in the states of Wyoming, Montana and Idaho, was the first National Park ever designated. In 1872, President Ulysses S Grant signed a law declaring that Yellowstone would forever be "dedicated and set apart as a public park or pleasuring ground for the benefit and enjoyment of people." This was seen as the starting point for a worldwide pattern of protection on a large scale.

FACTFILE

- There are 12 National Parks in England and Wales; the latest, the New Forest, was designated last year
- The parks, visited by millions of people each year, cover around eight per cent of England and 20 per cent of Wales
- National Parks have two purposes: to conserve and enhance their natural beauty, wildlife and cultural heritage; and to promote public understanding and enjoyment of their special qualities
- National Parks were some of the first areas to pay farmers to steward the countryside
- The parks are an important factor in generating the tourism which brings £8 billion a year to rural areas in England and sustains 400,000 jobs in rural areas
- The CNP is a registered charity representing over 40 environmental and amenity organisations. For more information, visit www.cnp.org.uk

All about the FEC

THE Farm Energy Centre has operated for almost 40 years, working with farmers, utilities — including National Grid — research institutes and manufacturers providing expertise on energy applications and energy efficiency.

Today it is the UK's leading source of information on the application of energy-based techniques in farming and horticulture.

Many farmers and growers make use of the FEC's varied services. These include: self energy audits; on-site energy audits; lighting fitting sales and design; new energy supply negotiations; agricultural and horticultural publications; climate change management; heating and ventilation design; tariff and contract selection.

The FEC also works with other organisations in the energy business such as the Energy Savings Trust, Action Energy and agricultural/horticultural organisations including the National Farmers Union, the Milk Development Council, Horticultural Development Council and the Health and Safety Executive.

Its database of energy techniques and equipment is a unique resource which allows farmers to track down suppliers offering specific equipment, and the FEC Trade Membership scheme helps to bring manufacturers and farmer clients together.

For more detailed information about the FEC, visit www.farmenergy.com

If you would like more information about any of the issues highlighted on these pages, write to FEC Services Ltd, Stoneleigh Park, Kenilworth, Warwickshire CV8 2LS. Tel: 024 7669 6512 or e-mail: info@farmenergy.com

Use the same numbers to obtain a list of FEC publications, including technical guides, and technical notes.

Don't be a pig for energy

ENERGY EFFICIENCY

workshops organised by the British Pig Executive and the Carbon Trust* have highlighted the need for pig farmers to create their own Energy Audit Plan.

Expenditure on energy can be reduced if it is bought cheaper and used less. Energy use affects the environment and the outcome again depends on the use of less energy and fuels that pollute less.

Since expenditure on energy is already a key item at pig farms, feed mills and processing plants — and is likely to increase substantially — there is a strong argument for specialist advice. Trainees at the workshops

were informed that pig farmers do not buy power — they actually buy energy which is power x time. Whereas powerful equipment is often perceived as the cause of huge electricity bills, it is often used sparingly and the expenditure works out less than imagined.

For example:
A 30KW feed mill used for five hours per week = 30KW x five hours x 52 weeks x 8.5p/KWH = £633

Individual creep lamps, on the other hand, do not have much power output but generally several of them are used at the same time and they tend to be

switched on for long periods. This means five 250 watt pig lamps used 24 hours a day, 320 days per year = 0.25KW x 24 hours x 320 days x 8.5p/KWH = £815.

In the examples, expenditure from several much-used creep heater lamps is almost 23 per cent more than limited use of a power demanding feed mill.

There are many other ways that savings can be made — effective insulation and more efficient lighting, for example. The FEC recommends that all pig farmers should create their own Energy Audit Plan. This will involve giving one person responsibility for energy efficiency; undertaking



Installing transparent roof sections cuts the cost of artificial lighting

Energy film is a hot favourite

A new energy reflective film for lining buildings, which reduces heat lost through the transfer of radiant energy has been produced by Valéron. A foil material — currently on trial in several UK poultry buildings, see picture — is encapsulated in a tough plastic film which can resist tearing and severe physical damage. This means it is difficult to damage during installation and resists aggressive cleaning and power washing.

As well as its heat reflective properties, it seals draughts through the structure and also increases the effectiveness of light. The manufacturer says the material improves conditions inside poultry houses, increasing flock health and growth ratios by helping to reduce the detrimental effects associated with heat or cold stress, gas build-up, biological contaminants and cross infection.



Insulate for animal comfort

Insulate those roofs — and make life more comfortable for your animals. That's the advice from the FEC's Andrew Kneeshaw who said farm building thermal image surveys revealed the importance of insulation.

On a June morning when the ambient temperature was 16 degrees C, the roof surface temperature was shown to be consistently over 45C, peaking at over 50C because of the

effect of radiant heat from the sun.

"This external temperature translated into an inside roof temperature of over 30C," said Andrew.

"No amount of ventilation could keep animals cool under this roof — but with a couple of inches of insulation, the performance of the building could be transformed."

Potato cost survey chips in

FEC has completed an Energy Review for the British Potato Council outlining the effect of the recent energy price increases.

Businesses in this sector have seen increases of as much as 60 per cent in the past 18 months, pushing storage costs up by an average of £2 per tonne.

Rewind or not rewind, that's the question

When an electric motor fails, you have two choices — buy a new one, or have the motor rewound.

The temptation is to opt for rewinding. It's cheaper and produces a refurbished motor that looks as good as new. But, says the FEC's Andrew Kneeshaw, it is not always the best solution.

Two important factors can render the "cheapest" option the most expensive in the long run.

New high-efficiency replacement motors are more efficient than older ones. Thicker copper windings reduce waste heat production, better lamination design reduces losses and a more efficient cooling system cuts ancillary power use.

The resulting two to three per cent efficiency increase may seem small, said Andrew, but when it is considered that a motor will consume its own value in energy in under seven weeks, paybacks on marginal efficiency improvements can be very rapid.

"Add to this a marginal decrease in efficiency which generally occurs when a motor is rewound and what results is a compelling argument to upgrade a motor on failure rather than rewind," said Andrew.

UPDATE

The National Farmers' Union, in conjunction with Forum for the Future*, has won £171,000 from Defra to help communicate climate change and global warming issues to farmers. This will cover subjects including the effect on cropping and the role of renewable fuel. FEC will provide information to the project in the area of energy efficiency. The money comes from Defra's Climate Challenge fund which is enabling different sectors to reduce their contribution to climate change and respond to its impact.*Forum for the Future is a charity set up 10 years ago to work in partnership with business, the public sector and others to build a sustainable future.

Bubbling over



THERE'S TOP-NOTCH bubbly on hand when grantor Ian Bird and his wife Sheila celebrate family birthdays this month.

Ian, of Catchgate Farm, Castle Eden, Hartlepool, has won four bottles of Camel Valley Brut produced by fellow grantor Bob Lindo at his winery in Cornwall.

We featured Bob's award-winning wine in the last issue of *Gridline* and invited readers to enter a competition to win four bottles of the 2004 vintage.

All they had to do was give us the freephone telephone number of National Grid's Transmission Enquiries team. Ian was one of many who gave us the correct answer — 0800 731 2961 — and his name was first out of the hat.

Ian and Sheila, pictured, who have two daughters, say they both enjoy a glass of wine and look forward to sampling Bob's sparkling wine.

"Sheila is always entering competitions and a few years ago was on a real winning streak. But we haven't won anything for ages," said Ian. "Perhaps this win will start us on another winning streak!"

A prize to tree-sure



It's competition time again!

We are offering a copy of The Tree Council's new book *Trees in Your Ground** to 25 grantors who answer the following question correctly. You'll find the answer in this issue of *Gridline*.

The question is: "National Grid is adopting IVM techniques. What does IVM stand for?"

Send your answers to Gridline Competition, Papers Publishing, Stirling House, College Road, Cheltenham GL53 7HY, or email: john@paperspublishing.co.uk

Entries must be received by ??????

*The book — backed by National Grid, which has worked in partnership with The Tree Council since 1990, aims to encourage everyone to value and care for trees in their neighbourhoods. It also helps people to choose the right trees for their patch.

Copies are available by sending a cheque for £8.99 (including postage and packing) to The Tree Council, 71 Newcomen Street, London SE1 1YT.