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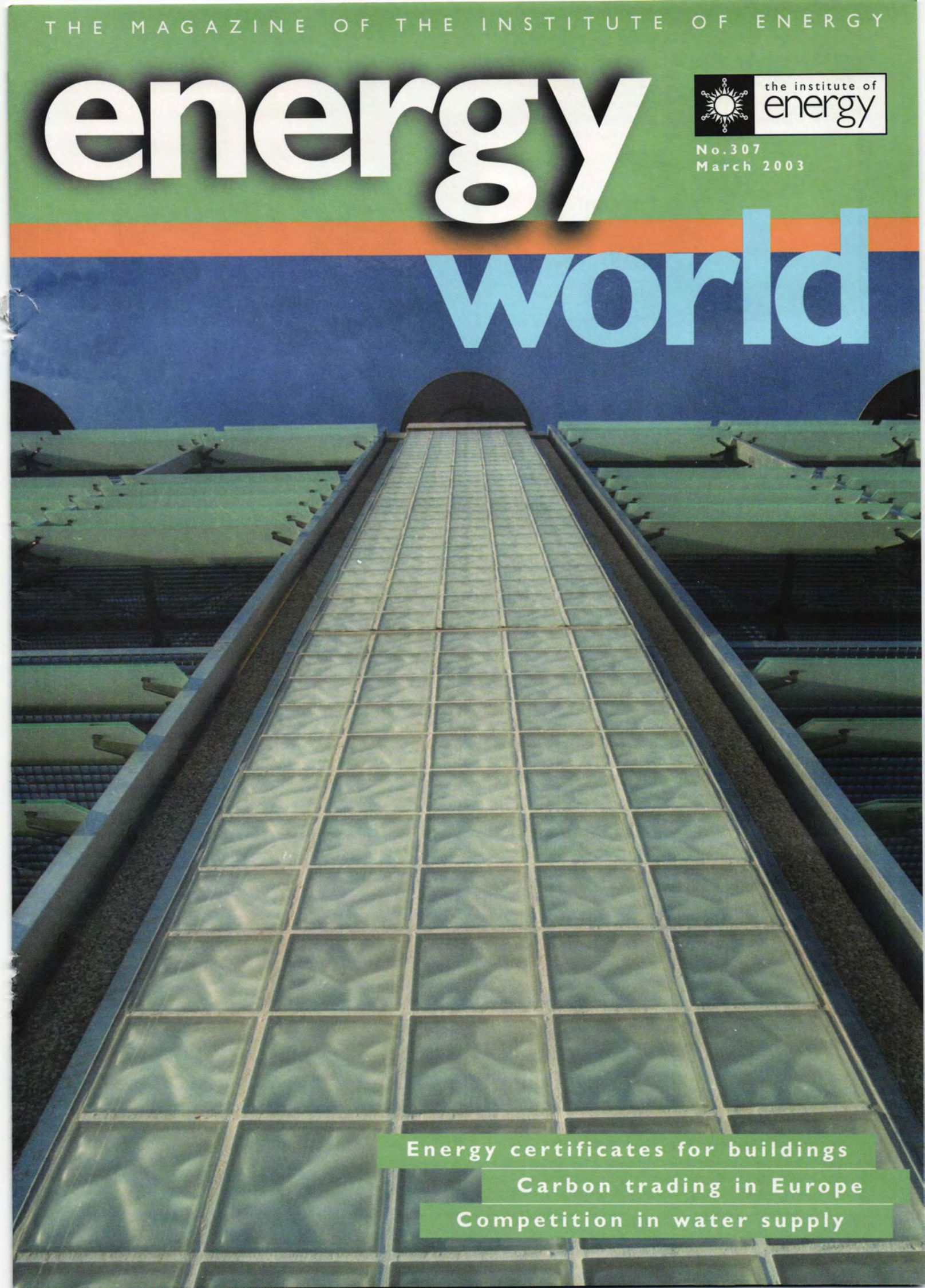

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Detail from what is perhaps Britain's best-known low-energy building – the Building Research Establishment's Environmental Building at the main BRE site near Watford. This view shows part of the south-facing side of the three-storey suite of offices and seminar rooms, featuring one of the glazed stacks (centre) and motorised glass louvres. Britain's commercial buildings are going to have to display energy certificates in the future - see page 8.

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Iraq and oil - scenarios for the future

Colin J Campbell

While some people have implicit faith in their Governments, others question the motives for threatening to attack Iraq, wondering if perhaps oil is a not-so-hidden agenda. It is a sensitive and obscure issue as the UN Inspectors continue to fail to unearth tangible evidence despite diligent search.

Iraq was established at the end of the First World War as a British-administered territory out of the ashes of the Ottoman Empire. Calouste Gulbenkian, a young Armenian oilman, had already secured oil rights to the region, which formed the foundation of the Iraq Petroleum Company. Its shares were divided almost equally between companies of the victorious Allies, leaving a legendary 5% for Mr Gulbenkian.

Exploration was soon richly rewarded in 1927 with the discovery of about 16 Gb (billion barrels) in the Kirkuk field in the north of the country, stimulating a thorough programme of regional exploration in the inter-war years.

The Second World War was followed by growing nationalism throughout the region leading most of the producing countries to nationalise the holdings of the foreign oil companies: Iraq doing so in 1972. Successful exploration resumed under the national oil company. In total, as many as fifty oil fields have been found, holding some 90 Gb, of which about 50 Gb lie in just three fields: Rumaila (discovered in 1953); Kirkuk (1927); and East Baghdad (1976). Production to-date from all fields amounts to almost 30 Gb, leaving about 60 Gb for the future, plus whatever new exploration might turn up. Larger fields always tend to be found first, being too big to miss, and Iraq was no exception. It follows that what remains to be developed, never mind discovered, will be smaller by orders of magnitude.

The peak of discovery in the United States was reached as long ago as 1930, to be inevitably followed by a corresponding peak in production some forty years later. Peak marks a turning point between growth and decline, whose impact gradually spreads to the economy as a whole, oil playing such a critical part in a nation's essential energy supply. The eternal pattern of growth, peak and decline was by no means unique to the United States, being subsequently repeated in one country after another, UK production having peaked in 1999.

The US evaded the natural consequences of its own depletion by increasing imports from other less depleted countries. Imports now stand at 12 Mb/d (million barrels a day), over 60% of consumption and, even with static demand are set to rise, passing 16 Mb/d by 2010. As alternative sources head into natural decline, the United States has to rely increasingly on the Middle East, which holds about half the world's remaining conventional oil. However, the Middle East countries treat their oil as national assets, offending the dictates of the global market that require the free flow of capital such that national resources go to the highest bidder. Here lies the heart of the conflict. Furthermore, Iraq has insisted on being paid for its oil in euros, undermining the role of the dollar in global oil transactions which could have devastating financial implications for the US economy.

The United States, with its military might, could no doubt install a puppet regime in Iraq. Some hope that the Iraqis would welcome the invaders with open arms. If so, a successor to the Iraq Petroleum Company could move back in. However, an immense amount of work and investment would be required to rehabilitate the old fields and replace the ageing equipment. Existing wells would have to be reconfigured to counter rising water-tables, and infill wells would have to be drilled. To bring in the large number of smaller, undeveloped fields would be a huge task, involving access roads to the remote locations, water and electricity supplies and camps for the personnel. Under tranquil circumstances, current production of 2 Mb/d could perhaps double by 2010, which would still meet only one quarter of US demand then. Production might continue to rise for about fifteen years beyond 2010 before Iraq would hit its midpoint of depletion, which normally equates with the onset of natural decline. The conquest of Iraq would, therefore, provide no long-term solution to America's supply.

But the Iraqis may not welcome invaders with open arms, especially if the invasion causes a colossal loss of civilian life. In that event, the invasion would almost certainly be followed by sabotage and suicide bombings by surviving patriots, making it virtually impossible for foreign companies to operate. Production would then fall, especially if the fields had been fired in the course of resisting the initial invasion.

A third scenario is that the whole of the Middle East would erupt in popular outrage in response to the invasion. This might prompt the US to take the Saudi fields as well. They might be an easier military target, and would form a much more valuable prize as they are modern, well-run fields.

On present trends, the decline in world oil supply from natural depletion will commence around 2010, and the share coming from the Middle East has to rise simply because it has much more left than anywhere else. The US may seek to control Middle East oil, but at best this would offer no more than a temporary respite from the iron grip of depletion. A better policy would be to find ways to greater energy efficiency, bringing in alternatives wherever possible. The world faces an energy discontinuity as the growth of the past gives way to decline. Discontinuities cause tensions that can flare into wars with unpredictable outcomes.

Colin Campbell runs the Association for the Study of Peak Oil

IEA commends Germany's carbon emission reductions but cautions on the nuclear phase-out

Germany has been commended by the International Energy Agency (IEA), in a new policy review, for managing to substantially reduce greenhouse gas emissions and implementing reform of its electricity and gas markets. While recognising the domestic political impetus behind Germany's decision to phase out nuclear power, the IEA's *Energy Policies of IEA Countries – Germany 2002 Review* also concludes that maintaining greenhouse gas emission levels beyond the Kyoto target years would be a challenge as a result.

Germany ratified the Kyoto Protocol in April 2002 and is well on track to meet its Kyoto target. In 2000, Germany was only about 2% from its target under the EU burden-sharing agreement, and provided the bulk of EU reductions in emissions between 1990 and 2000. The Government is now pursuing an additional target: to reduce carbon dioxide emissions from 1990 levels by 25% by 2005. However, this is a tougher goal, since emissions in 2000 were almost 10% above this target, says the IEA.

Germany introduced a package of measures in its National Climate Protection Programme in 2000. These include voluntary reduction agreements, minimum feed-in tariffs for electricity from cogeneration and renewables, an 'eco-tax' and legislation to encourage energy efficiency. As a result of these and earlier policies, Germany has become the world leader in wind power installations and the European leader in photovoltaic installed capacity. The benefits are counterbalanced, however, by the burden on taxpayers and consumers, adds the Agency.

Despite the Government's preference for domestic measures, the IEA suggests that use of the Kyoto flexible mechanisms would reduce the cost of these measures. The report also recommends that the eco-tax should better reflect the carbon contents of fuels and their externalities, and that it should apply to energy users in a more equitable manner.

Germany was one of the first IEA countries to fully liberalise its electricity and gas retail markets. While prices for industrial and domestic consumers have fallen, problems of access remain, says the IEA, notably expensive electricity network access tariffs, and slow and costly dispute settlement, implying abuse of dominant market position by incumbents.

Energy sector consolidations and mergers that have occurred as a result of increased competition, notably at the supra-regional level, and need to be closely monitored by the Federal Cartel Office, says the IEA. The mergers of RWE and VEW, Veba and Viag and the on-going merger case of E.On and Ruhrgas are good illustrations.

The IEA report welcomes the Government's decision to phase out the protection of lignite power plants in the New Laender. German hard coal still receives a significant, though declining, level of subsidy. The IEA does not consider this subsidy to be warranted on energy policy grounds, since the international market offers secure coal supply at lower prices.

Germany has decided to phase out nuclear power, which currently accounts for 30% of electricity generation and 13% of total primary energy supply.

The energy policy implications of the decision are significant. 170 TWh of base-load electricity will have to be replaced, without prejudice to climate change mitigation after the Kyoto commitment period. The phase-out entails no direct cost to the Government, but any economic benefits of extending the operational lives of fully depreciated units will be lost, says the IEA, and the decision will increase Germany's reliance on energy imports.

The first high-temperature fuel cell in the German telecommunications industry has been commissioned, at the Deutsche-Telekom subsidiary DeTelmmobilien in Munich, by MTU Friedrichshafen, itself a subsidiary of Daimler-Chrysler. MTU fuel cells are currently undergoing extensive field trials in Europe, with 10 units commissioned by the end of 2002. The company plans to install a further seven units this year.

European wind power capacity climbed by 31% in 2002

Some 5,871 MW of new wind power capacity, worth 5.8 billion euros, was added to European electricity grids last year, according to the European Wind Energy Association (EWEA). This is a 31% increase over the previous year, when nearly 4,500 MW came online.

"Europe is reinforcing its global leadership in wind technology. The European market has grown by an average 35% per year over the past five years, but it's only the tip of the iceberg. Given the right conditions, the global wind power market could be worth 25 billion euros a year by 2010," said Corin Millais, CEO of EWEA.

Germany, Spain and Denmark accounted for almost 90% of the wind power capacity installed in 2002. With 3,247 MW, Germany accounted for 55% of the installed capacity, reaching a total of 12,001 MW by the end of 2002, enough to meet 4.7% of national electricity needs. Spain followed with 1,493 MW to reach a total of 4,830 MW.

Wind power - racing ahead in Europe, less so in the US

Denmark installed 497 MW to reach 2,880 MW, enough to meet 20% of the country's electricity needs. Also Netherlands (217 MW) and Italy (103 MW) reached three-digit figures for installation in 2002, according to EWEA.

"The industry is capable of continuing these high growth rates, but we need additional political backing beyond Germany, Spain and Denmark. In these three countries, thriving industries and tens of thousands of jobs have been created. These successes could be rapidly replicated in other countries." said Millais.

- Meanwhile, the installed wind generating capacity in the United States increased by 10% in 2002, says the American Wind Energy Association (AWEA). Though the 410 MW of new wind power still represents a healthy growth, the results are disappointing compared to the record growth in 2001, when US capacity increased by about 66%.

US military looks at hybrid engines

General Motors Corporation (GM) has introduced a fuel-efficient pickup truck, based on a hybrid electric drive that features a diesel V8 engine, for use by the US Army. The truck also features a 5 kW regenerative fuel cell, manufactured by Hydrogenics Corporation, that serves as an auxiliary power unit (APU) for powering equipment in the field.

The fuel cell APU produces hydrogen while the truck is running, then converts the hydrogen into electricity in the field, serving as a clean and quiet generator. The hybrid diesel system can also be used as a generator, providing up to 30 kW of either dc or ac power. According to GM, the diesel hybrid system reduces fuel consumption by 20% compared to conventional diesel vehicles. The Army is expected to want 30,000 hybrid electric tactical vehicles by the end of this decade.

GM's work for the Army is just one of several projects aimed at increased fuel efficiency for the US military, involving the development of hybrid engines and/or fuel cell APUs.

New electricity market for Singapore

The Energy Market Authority (EMA) of Singapore, working with the UK-based PA Consulting Group, has unveiled a new, fully competitive wholesale and retail energy market. Under development for three years, the new market has been operating since the start of the year.

The market is designed to promote the efficient supply of competitively-priced electricity, open up the retail market to full competition, allow certain government-owned assets to be privatised, and encourage private investment in Singapore's power system infrastructure.

Key restructuring initiatives included:

- separation at the ownership level of the contestable and non-contestable parts of the electricity industry;
- establishment of a system operator and market operator;
- establishment of a market support services entity to undertake meter reading, meter data management, billing, consumer transfers, and provide default electricity supply;
- establishment of a real-time wholesale market for electricity, regulation and reserve; and
- The progressive liberalisation of the retail market.

Is there power on Mars?

UK-based science and technology company QinetiQ is to undertake a study, for the European Space Agency's (ESA) Aurora Programme, to identify power generation and storage technologies for use in the harsh environment of Mars.

Mars is the primary target for future human missions and, in 2000, ESA began a technology development project to outline a long-term strategy for humans going to the red planet. In preparation of those missions many issues of survivability have to be tackled, including advanced life support systems for astronauts during the long journey there and whilst on the surface.

A key part of this technology development is the power systems needed when on the surface of Mars. The astronauts need electricity to run critically important life support systems, to carry out experiments and to explore the surface in rovers and other mobile units.

QinetiQ will provide specialist space knowledge as well as outline a clear technology development roadmap for ESA. Other members of the consortium led by QinetiQ include nuclear technology experts Serco Assurance, Technicatome (French experts in the safety, reliability and availability of nuclear propulsion systems) and UK-based AEA Technology.

Potential future applications include power generation and storage in space (to allow interplanetary missions to get a larger quantity of 'science mass' to the surface of the planet, so scientists can learn more about those planets).

Repeat ecological disaster in Iraq feared

The US military is reported to be planning for the prospect of massive environmental damage that would follow the sabotage of Iraqi oil wells as part of the looming conflict there. The Pentagon is reported to have invited all of the world's major oil well firefighting companies to submit contingency plans to tackle the fires which would follow the successful mining of well heads.

Another sabotage possibility being discussed is the deliberate diverting of oil flows into the Tigris and Euphrates rivers, which hold large parts of the freshwater supplies for the Middle East, or into local marshes. Either eventuality could produce one of the worst ecological disasters in history.

There are also reports that British troops are being trained to take a leading role in protecting Iraq's 1500 oil fields.

Nearly 700 Kuwaiti oil fields were set ablaze in the last, 1991, conflict in the region, and these took nine months to bring under control. Experts fear that the remote location of many Iraqi wells, and their stronger flow rates, will make the equivalent task much harder.

ALSTOM turbines travel the globe

Paris-based ALSTOM has won a series of overseas contracts for both renewable and fossil energy power generation projects.

The company is to supply three 200 MW Francis turbines to a hydro-electric power station in south west China. Working within a consortium with Siemens Hydro Power Generation, it is also refurbishing two hydro-electric power plants in Bulgaria. The company is also supplying three 20 MW power plants to be fuelled with wood wastes in Germany.

Meanwhile, ALSTOM has won an order worth 4.5 million euros to supply a Cyclone gas turbine compressor driver to enable rehabilitation and expansion of the Kharg 4 petrochemicals project at Kharg Island, Iran. The company has also won an order for a 43 MW gas turbine to be used in a cogeneration application at the Infraserv company at Hochst industrial park outside Frankfurt, Germany.

CDM transaction for Brazilian steel producer

The International Finance Corporation (IFC), the private sector financing arm of the World Bank Group, has announced the largest transaction to date under the Kyoto Protocol's Clean Development Mechanism (CDM). The IFC-Netherlands Carbon Facility (INCaF) has provided a conditional commitment to the Brazilian steel producer V&M do Brasil (V&M) to purchase five million tonnes of greenhouse gas emission reductions.

The total contract value is expected to be 15 million euros. In addition, Toyota Tsusho Corporation has signed a contract with V&M to purchase additional emission reductions. The international GHG advisory company EcoSecurities Group Ltd advised V&M in the structuring of the project and both of these carbon transactions.

The V&M project will supply sustainably-produced charcoal to avoid the use of coal for the industrial-scale production of steel. It will also lead to a cut in emissions of over 21 million tonnes of carbon dioxide equivalent over the next 21 years, says EcoSecurities.

Many Brazilian steel producers have converted from charcoal to coal-derived coke due to cost savings. However, V&M realised that it could continue to use environmentally friendly charcoal by offsetting the additional cost with the revenue from emission reductions. The company will make investments of approximately $50 million in its forestry and kiln operations.

Moving towards BETTA electricity arrangements

The Government has published a draft of its 'Electricity Trading and Transmission Bill', designed to bring into existence a single electricity market for Great Britain.

British Electricity Transmission and Trading Arrangements (BETTA, or 'son of NETA') will introduce a single set of trading rules, increasing competition in the Scottish electricity market and creating a unified electricity market across GB.

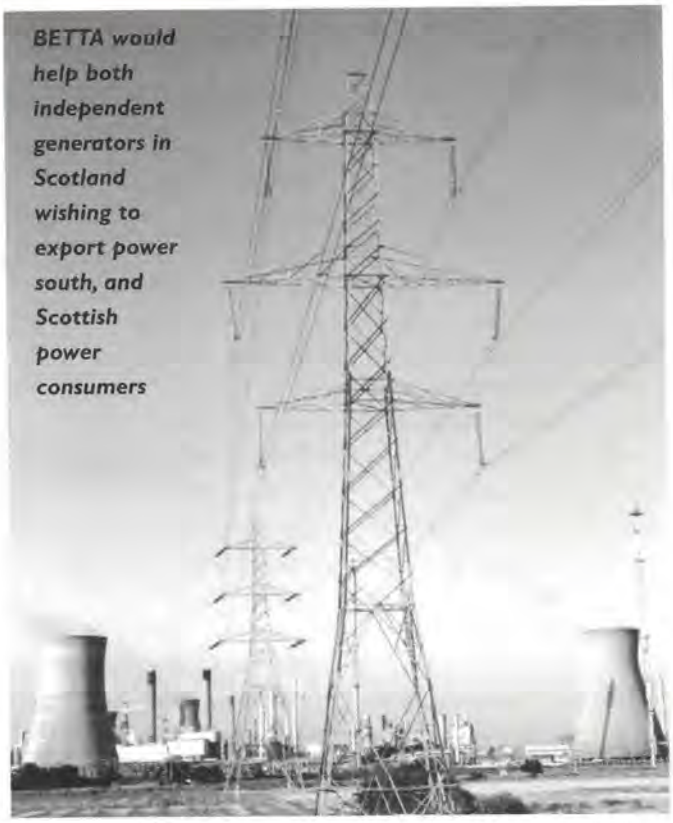
The new transmission arrangements will also reduce the barriers faced by independent generators who want to supply customers in the south.

At present in Scotland, an independent generator may have to pay up to three sets of transmission charges to sell electricity to England and Wales, says the DTI. BETTA would allow generators to pay just one charge, and the transmission system would be administered by an independent system operator (designated to be National Grid Company) who will be independent of generation and supply interests.

Energy Minister Brian Wilson said that the Government is strongly committed to implementing BETTA by April 2005 at the latest. For project planning purposes, it is working to a deadline of October 2004.

"The introduction of BETTA will free independent Scottish generators from current barriers, opening up opportunities for them to sell into the rest of the UK on a level playing field - particularly in the renewables sector," said Wilson.

"Scotland is vital to the UK reaching its 10% renewable energy target by 2010 and, to this end, the BETTA arrangements will ensure that all generators will have access to the Grid on a non-discriminatory basis. BETTA will also give Scottish consumers the same benefits of increased choice and lower prices that are available to consumers in England and Wales".



BETTA would help both independent generators in Scotland wishing to export power south, and Scottish power consumers

Ofgem Chief Executive Callum McCarthy welcomed the move, saying that Scottish customers should see an average cut in their electricity bills of £20 a year as a result.

Rewiring Britain – Ofgem looks to network operators to

Energy regulator Ofgem has challenged electricity distribution network operators (DNOs) to help in the 'rewiring' of Britain needed to fulfil Government policies to increase the use of both CHP and power from renewable sources.

Difficulties in connecting distributed generation (DG) schemes, including CHP and renewables, to local power networks has consistently been cited as one of the major barriers to the growth of smaller-scale generation projects. And Ofgem has often been accused by DG campaigners as being soft on DNOs.

Now, in what is being seen as a significant change of tack by the regulator, Ofgem Chief Executive Callum McCarthy said in a letter to DNOs, "Ofgem wants to contribute fully to the Government's objectives for renewables and CHP and we are in the forefront of identifying what this really means for those we regulate. We need to develop a framework which will provide the correct investment incentives and rewards and enable companies to respond to real demand as it develops. This is not business as usual but a time of huge change for us all."

The key issues facing Ofgem and the DNOs include how to:

- deal with uncertainty in the type, timing and location of new power generation;
- adapt existing price control arrangements to meet new developments; and
- ensure there are incentives for the economic and efficient management of costs in facilitating access to and operation of the networks

Meanwhile, Ofgem has announced proposals which could help reduce the £600 million worth of electricity that is lost on distribution networks each year. The proposals look at whether current incentives that the 14 electricity distribution companies of Great Britain (DNOs) face to reduce the amount of electricity lost on their networks can be improved.

On average, 7% of all electricity that is transported across the networks is lost each year, accounting for around £12 of the average

Condensing boilers: no more excuses

Building services specifiers will no longer be able to hide behind traditional objections to condensing boilers, following publication by the Housing Energy Efficiency Best Practice Programme of a new report: *Domestic Condensing Boilers – The Benefits and the Myths* (GIL074).

The new leaflet will help readers both to understand the benefits of condensing boilers and dispel the popular myths and misconceptions surrounding them. It also identifies sources of information on grants and support available for condensing boiler installations. ***The report can be downloaded from www.housingenergy.org.uk.***

cut losses

customers' bill.

Ofgem's Managing Director of Regulation and Financial Affairs, Richard Ramsay said, "It is very important that we look to reduce the amount of electricity lost as it is transported over the distribution networks to homes and businesses. For example, by reducing losses by just one percentage point, generation-related carbon dioxide emissions may be reduced by 750,000 tonnes of carbon – the equivalent of the emissions from a medium sized gas-powered generator."

Grants for renewable energy in the community

Homeowners, schools and communities across the UK are being encouraged to take the initiative in developing and installing their own renewable energy schemes with the launch of a £10 million Government support programme.

To be operated by the BRE, the two-and-a-half year 'Clear Skies' initiative is a component of the Government's renewables strategy designed to capture the imagination of individuals and local communities that want to play their part in the renewables revolution. The Scottish Executive is putting up £3.7 million to fund its own parallel scheme.

Suggestions for local projects could include, says the DTI:

- a 'solar street', where water heating panels are fitted to the roof of every house in a street;
- a small-scale hydropower project in a school;
- installing a wind turbine to provide electricity to a hospital; and
- using energy crops, such as willow or poplar, to provide heat for a community farm.

Community organisations can apply for up to half of the cost of installation, or £100,000, whichever is lower. Household grants are likely to range from £500 to £5,000.

The capital grants programme will be supplemented with measures designed to increase the uptake of renewable energy technologies and create a better understanding of the range of benefits they can deliver. The initiative will provide training and accreditation for professional installers to ensure that the general public can trust the products being installed.

Contact www.clear-skies.org, or phone the Clear Skies hotline on 0870 2430930.

Electricity consumers 'should go to tender early to beat price rises'

Analysis of the UK electricity market by the Energy Information Centre (EIC) suggests that industrial and commercial retail prices are at risk of significant increases. The EIC advises consumers to take advantage of currently competitive bids being offered by suppliers.

EIC Retail Energy Rates at the start of February stood at 2.09 p/kWh for low load factor sites and 1.95 p/kWh for high load factor sites, around 4% lower than the same time last year.

Last summer, retail rates followed the exceptionally low wholesale prices to 1.86 p/kWh for low load factor sites and 1.82 p/kWh for high load factor sites. These prices were caused by massive overcapacity in the generation market. This is unlikely to be repeated, says EIC, due to the planned closure of several large power plants taking some of the slack out of the system.

While retail price levels are currently fairly steady, energy buyers need to be aware that there is a risk of rates rising during spring and summer 2003.

The Government is currently considering the rescue of British Energy, which may trigger sustained increases in retail electricity rates. Side effects of the rescue, such as the closure of power stations or unravelling of supply contracts, would impact on retail rates, says the EIC.

Powergen has already announced the closure of two of its old coal-fired power stations, and other generators may choose to shut down several stations of a similar vintage, adds EIC. Any further constraint on capacity margins could well cause wholesale prices to rise, especially during periods of peak demand, disproportionately impacting low load customers.

EIC recommends that customers close outstanding April contracts as soon as possible, looking for year-on-year reductions. Consumers should also consider tendering July and October contracts early, to lock in the current low prices and protect them from the risk of dramatic increases.

Read the label – large public need to

One of the European Commission's first actions in 2003 was to publish the Energy Performance of Buildings Directive. This requires all new and existing buildings to have an accredited energy (or carbon) certificate when they are sold or let, while buildings over 1000 m² with either public sector occupiers or frequent public access, will need an accredited certificate displayed prominently. The seven-nation Europrosper team, led by its UK partner, Energy for Sustainable Development Ltd, is considering how this should be done.

When the European Union signed up to Kyoto on behalf of its Member States, it also put forward a Climate Change Programme of additional policies – a mixture of supply and demand side measures prioritised by cost effectiveness – to deliver its commitments to reduce carbon dioxide emissions and improve the security of energy supplies. The Energy Performance of Buildings Directive is a cornerstone of this Programme (see *Energy World* March 2002, page 8) and the 'energy label' for buildings is set to be the first initiative that will have a direct influence on our everyday lives.

The UK has about 100,000 public buildings over 1,000 m², from schools and government offices to hospitals, sports centres and hotels. Soon, these will need to display certificates with information about the building's energy efficiency and carbon emissions. The environmental credentials of the organisations who own, occupy or manage these buildings will then be directly measured and accessible to public scrutiny.

It is not surprising that buildings have been targeted – in the UK they account for some 46% of all carbon emissions, split residential 23%, commercial 16% and industrial (non-process energy) 7%. The main difficulty in tackling this sector is the very slow turnover in the stock and the political minefield of trying to impose improved standards retrospectively. The Directive attempts to respond to this by at least making performance visible to anyone purchasing or renting a building, and to the general public when they use larger buildings which, by inference, the EC deems to have some responsibility to lead by example.

The ratified Directive was published in the EC Official Journal on 4 January 2003. The timetable for implementation requires Member States to transpose the Directive into their national law by the beginning of 2006 – the exact details are left to suit their individual circumstances, see Figure 1. The requirement for energy performance certificates can be delayed by up to three years (that is the beginning of 2009) if a Member State can show it lacks the necessary qualified experts.

What does the Directive require?

The Directive focuses on providing certificates which express energy performance for owners, buyers or tenants at the point of completion, renovation, sale or rental. New and refurbished buildings will need to have a *modelled* rating, based on theoretical calculations and benchmark minimum standards. The position for empty buildings or those due to have a new occupier (which includes all houses for sale) is not so clear: the necessary input data for theoretical calculations may be costly to obtain, while the alternative of an *operational* rating, based on the building's actual (metered) energy history, may have little relevance for a new occupant. Implementation will therefore need to be flexible.

Certificates for occupied 'public' buildings need to be displayed prominently and to be ready by the time the Directive is fully implemented. The most effective and convenient way of certifying them is likely to be an operational rating based on metered energy use. This has considerable ramifications for the many organisations sensitive to their public profile, and ought to accelerate their energy efficiency programmes so that they achieve good

Europrosper

Europrosper is a UK-led project funded by the EC's SAVE programme and in the UK by the Carbon Trust. Europrosper's core work is to develop a detailed procedure and associated training package for calculating the energy label for occupied offices, including those classed as public buildings and needing to display certificates. Europrosper is co-ordinated by Energy for Sustainable Development Ltd who lead a UK team which includes William Bordass Associates, Target Energy Services and Building Use Studies.

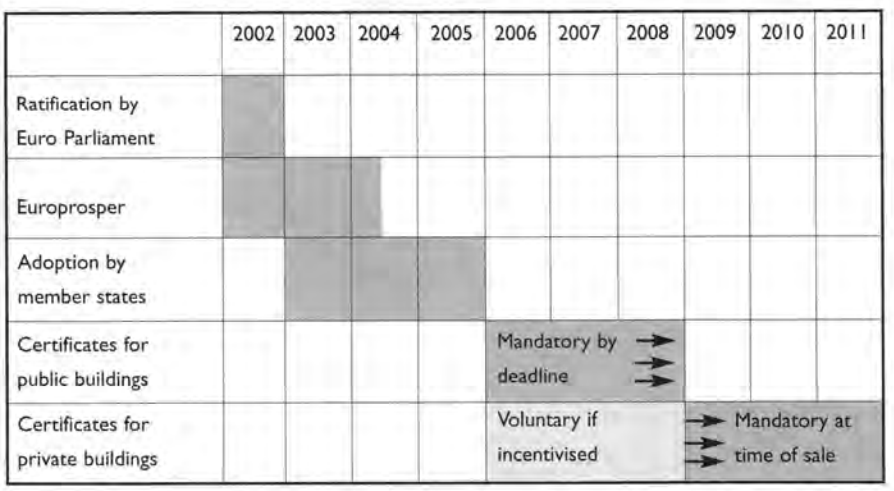


Figure 1. Timetable for implementation

buildings will soon display an energy certificate

by Robert Cohen, Bill Bordass and John Field

Building life-cycle stage	Energy history?	Method	Certificate status	Subject of grading
New	No	Calculate using design data	Modelling rating	Asset only
Refurb	No			
Empty	Maybe	????	????	????
Occupied	Yes	Use measured data from meters	Operational rating	Asset + management

Table 1. Recommended methods for assessing energy use

results by the time certificates are issued. Government also has much to do, not least in defining what constitutes a public building and the meaning of the word 'prominently'.

A summary of the methods we recommend for different stages of a building's life cycle is shown in Table 1.

What might the label say?

The Directive requires energy performance to be compared with 'reference values' or 'benchmarks'. In order to assess a building's *operational* energy performance, we think its energy consumption index may well need to be reported on the Certificate in two ways: in comparison with benchmarks to calculate a relative rating, *and* at an absolute level. In the UK, the index will probably be reported in kg of carbon dioxide per m^2 of floor area per year, but in many other EU countries kWh of primary energy may well be used. The certificate should therefore contain the following information.

1. The absolute rating

This could be by comparison with national or regional statistics for the building stock as a whole, or, for an office building, for example, just the office stock. It might show the building's position within the statistical distribution, if this were reliable, for example deciles (giving a rank of A to J). Alternatively, it could allocate a letter for its absolute energy consumption index, as illustrated in Figure 2.

2. The relative rating

This would be by comparison with a similar or 'reference' building. In the UK, energy benchmarks for offices, for example, have been for *standard* representative buildings defined by the four iconic office types in ECON 19 (*Energy Consumption Guide 19, Energy use in offices*, Energy Efficiency Best Practice programme, December 2000).

Although this may suit some buildings, for most we suggest moving to the use of *tailored benchmarks*: a procedure which produces energy benchmarks appropriate for the schedule of accommodation in the actual building being assessed and each area's density of occupation and equipment, and hours of use. The benchmarks can also take into account whether these 'activity areas' are naturally ventilated, air conditioned or mixed mode, whilst the tailoring also makes reasonable allowances for any special areas like machine rooms, catering, car park lighting and sports accommodation – see Figure 3.

3. Energy saving measures

The Directive also requires an energy certificate to list all the energy saving measures which would be cost effective, with their estimated implementation costs and benefits. In order to keep costs down, the recommendations may well need to include both generic measures calculated automatically and more specific methods proposed by the assessor.

4. Assessment of indoor environmental quality

The Directive stipulates that "*energy performance requirements shall take account of general indoor climate conditions, in order to avoid possible negative effects such as inadequate ventilation*", but offers no guidance on what should be assessed or how. We think a practical and cost-effective method would be to ask the building manager to confirm whether or not the indoor environmental quality is satisfactory and give the assessor points to look out for during the survey which could corroborate or question this view.

Provisional and full certificates?

The Directive defines energy performance as the amount of energy actually consumed or estimated to meet a building's needs and states that: "*To the extent possible, the certificate should describe the actual energy performance situation of the building and may be revised accordingly*". It also stresses the importance of making rapid reductions in energy use. Actual energy performance depends enormously on build and installation quality, how the occupier uses the building and how they (or the landlord, and/or their agents) manage it. Surprisingly, however, the details of the Directive make no mention of management aspects, fitout, or the landlord/tenant splits of energy use which often occur in rented buildings.

The stipulation for certificates to describe actual performance suggests that, ideally, an initial certificate based on design data should be updated to take account of actual consumption data as soon as practicable (in our experience, two to three years after occupancy). Although this goes beyond the minimum requirements of the Directive, for *new* public buildings over 1,000

m^2 we suggest that the initial certificates are regarded as provisional, to be replaced by full certificates based on actual performance after perhaps three years.

Certification of new buildings

There need to be good, transparent links between the theory-based certificates for new buildings and those which describe the actual energy consumption of buildings in use. The Directive specifies heating, hot water, cooling, ventilation and lighting as the minimum subset of end-uses to be included in the calculated energy index for new or renovated buildings, but Member States can add others if they wish. While selecting a subset is easy in design calculations, it is not directly accessible for buildings in use.

If the UK adopts the subset approach, then Building or other Regulations may need to require new public buildings over 1,000 m^2 to sub-meter the subset by end use to allow accurate comparison between predicted and actual energy consumed. In fact, this strategy would need only small revisions to the energy metering already required by the 2002 edition of Building Regulations part L2, if it were applied to all new or refurbished buildings over 1,000 m^2. It would also make sense for the concept of provisional and full certificates to become an integral part of the Building Control sign-off process.

Rating large and small buildings

A professional site survey may often be needed to issue an operational rating for public buildings over 1,000 m^2. However, in order to reduce the cost of certification and the demand for surveyors, it makes sense to develop methods which are potentially suited to both self-certification and independent accredited assessors (who can also verify self-assessments).

Much of the early 'market' for certification will comprise the pool of existing public buildings. Government will want to ensure that the certification market up to and beyond 2008 does not create first too much of a glut and then a famine for the assessors who will be trained and accredited over the next few years. A phased introduction (for example an earlier deadline for offices) would help to smooth the bulge, whilst the concept of full certificates would also fulfil this aim.

The building stock consists of mainly small, often simple buildings, and relatively few large ones. For example, Bruhns (*Property taxation data for non-domestic buildings in England and Wales*, Environment and Planning B, 27, 33-49, 2000) finds that only 4% of UK offices are larger than 1,000 m^2, although these account for 37% of office floor area. For smaller, more standard buildings needing to upgrade from a provisional to a full certificate, a simple, generic assessment may well be appropriate. Indeed, the necessary technical and area information could readily be gleaned from the building's log book (now a mandatory requirement for new non-domestic buildings and major alterations) and the required energy data could be made available automatically by the energy utilities.

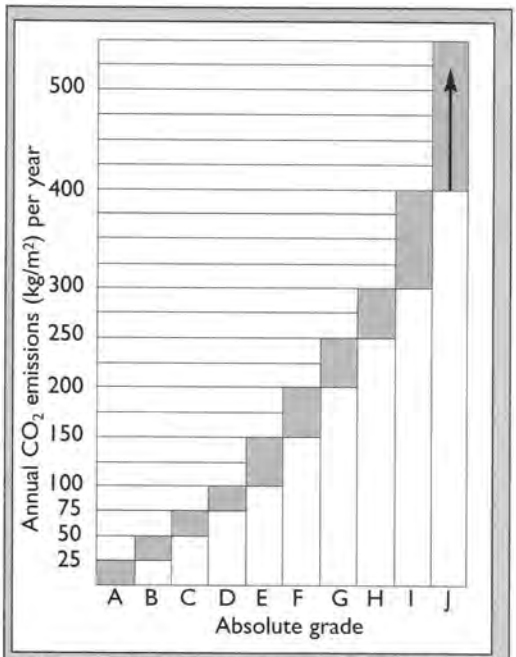


Figure 2. Absolute grading. In the UK, as a purely illustrative example, the absolute grade might be a letter (A to H) representing bands of annual carbon dioxide emission levels. Perhaps letters A to D might have bandwidths of 25 kg of carbon dioxide, the next four (E to H) 50 kg of carbon dioxide. These would deal with emissions up to 300 kg/m^2 per year, which would cover most buildings. Outliers might be covered by I (300 – 400 kg/m^2 per year) and J (over 400 kg/m^2 per year).

Conclusions

By itself, making a building's energy performance and carbon dioxide emissions transparent is unlikely to change purchasing decisions, or even to raise the priority given to making improvements. However, once a meaningful energy label is on prominent display, the PR value of a good

UK moves on the Directive

Following publication of the EU Energy Performance of Buildings Directive (EPD) in January, the UK Government now has to begin a process of transposing the Directive into UK law by the beginning of 2006. To help the Government, a high-level working group has been established by professional bodies and trade associations, with seventeen organisations forming the Directive Implementation Advisory Group (DIAG).

Following the inaugural meeting of the group, Professor David Strong, Managing Director of BRE's Energy Division and DIAG's acting Chairman, said "The EPD provides a major opportunity to achieve the step-change in buildings-related energy efficiency called for in the PIU Energy Review. However, practical implementation of the Directive will be very demanding and a pressing need exists to start the essential preparatory work as quickly as possible".

The Directive will have far-reaching implications for the owners, operators and developers of buildings in the UK. There are also major issues to be resolved regarding the large number of independent experts needed to meet the EPD's building certification and plant inspection requirements.

rating (or the risk of being named and shamed for a poor rating) could have a dramatic impact on attitudes to a building's energy use. Never before has the energy performance of buildings been subject to such direct public scrutiny. The beginning of the end for greenwash?

The Europrosper team would welcome comments on this article from readers. Please contact Robert Cohen, project co-ordinator, email: robert@esd.co.uk

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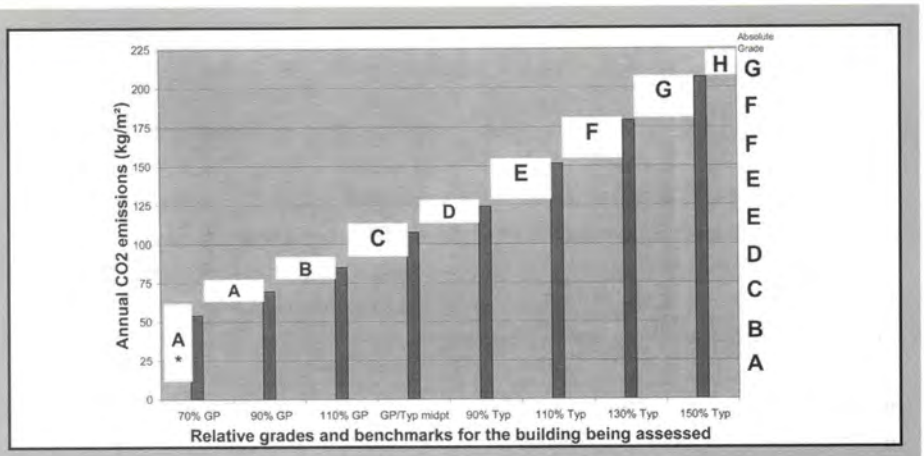
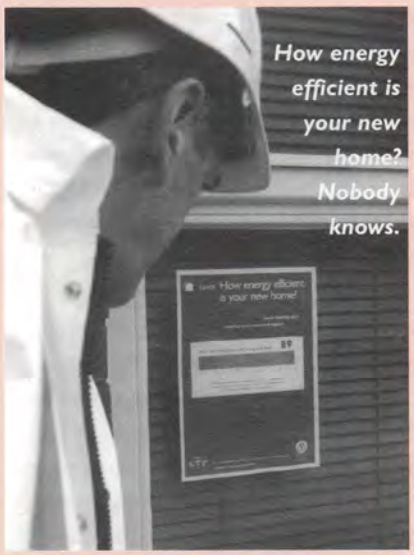


Figure 3. Relative grading. The relative grade related to the benchmarks for the reference building (standard or tailored), which in the UK are normally given for 'good practice' (GP) or 'typical performance'. For example (on the same A to H scale): A*: much better than GP (<70%), A: better than GP (70-90%), B: around GP (90-110%), C: nearer GP than typical, D: nearer typical than GP, E: around typical (90-110%), F: above typical (110-130%), G: high (130-150%), and H: very high (>150%).

Domestic energy labelling – not happening



Proponents of energy certification for large commercial buildings will be discouraged by the experience of the domestic energy labelling to date. Research published in January by National Energy Services (NES) and De Montfort University suggests that homebuyers are not being given the information they need – and are legally entitled to – about the energy efficiency of brand new homes.

Investigations reveal that 98% of house builders' sites fail to comply with the current Building Regulations to display SAP energy ratings, which give new homes a score between 1 and 120 for energy efficiency.

Three quarters of the builders' sales negotiators interviewed by NES researchers could not explain the SAP energy rating to customers, and over half didn't even realise that new homes now come with an energy rating at all. Over half could not say whether a brand new home would have lower running costs than a similar sized Victorian property.

"Every homebuyer and householder can make a significant contribution to reducing global warming by purchasing more energy efficient properties and appliances," says Dr Patrick Devine-Wright of De Montfort University, who supervised the research. "But what hope have we got of informing or influencing the buying decisions of the public if this basic information is not made available at the point of sale? If you can find out the carbon dioxide emissions of new cars, the same should go for new homes. It's something that the house building industry needs to start taking more seriously."

NES 'mystery shoppers' looked at the top 10 house builders' websites and visited a sample of their eligible sites across the south and east of England during last autumn, posing as people who wished to move out of an older property and buy an energy efficient brand new home.

The results of their research reveal that:

- no SAP rating information on house types was available on any of the top 10 builders' websites;
- 98% of visited sites failed to comply with Building Regulations by not displaying SAP ratings within unsold completed properties;
- just one site out of 50 had a significant proportion of homes clearly displaying the SAP ratings where they should be placed;
- only 12% of sample sites had any information available at all about the energy efficiency of the new homes up for sale (mostly in sales literature);
- only two house builders out of the top 10 had sales negotiators who could begin to answer questions accurately about the energy efficiency of the properties they were selling.

NES has already shown its report to officials from the Office of the Deputy Prime Minister. Over the next few months it will be working closely with Government to bring together consumer groups and representatives from the house building and energy efficiency industries to discuss possible solutions.

Also up for discussion will be the possibility of modifying the Building Regulations to make it more practical for house builders to comply, as well as additional support for house builders from organisations such as NHBC which carries out the majority of quality assured SAP ratings on brand new homes.

Energy performance of buildings – an alternative view

by Geoffrey Peters MInstE

The audience at last autumn's conference, organised by the BRE and the Institute of Energy, on the Energy Performance of Buildings Directive was highly supportive of legislation being introduced to the UK as soon as possible. But not everyone agrees on the approach. Here, Geoff Peters, Managing Director of building services consultancy Applied Energy, offers his thoughts.

It is proposed, that buildings should be benchmarked and given a rating-label based on their performance. It was proposed that, since some white goods, notably fridges and freezers are now labelled according to energy efficiency, that this is what should be done with buildings. However, I believe this to be an over-simplistic view for a number of reasons.

The fridge or freezer you buy is not the first one built. Prototypes are built, factory tested, modified and proved long before the purchaser is offered one for use. Such batch production enables refinements to be made to ensure the device offered for sale reliably delivers what is claimed by the manufacturers. Even so, failure can still occur. Now compare the case of typical buildings, each one is a prototype. Although thermal modelling techniques are helpful in predicting how the building is likely to perform, there is little opportunity for rebuilding. Whilst there may be some similarities between buildings of specific categories, for example hotels, offices, etc, there are still huge ranges within these categories and there are significant complications with mixed use buildings.

Energy ratings do not give any accreditation for the quality of the internal environment created by the building and its services systems. Indoor quality is a difficult enough subject in its own right and there are simply not enough commonly understood technical grounds to be able to grade qualitative aspects of buildings.

I believe there is justifiable concern that many smaller property companies might be able to fudge the rating perhaps using 'designer's discretion' given to their buildings. The potential legal wrangling that might ensue would only detract from property investment. Hence the major blue chip players might be disadvantaged by a universal rating scheme.

I am concerned about the impact that the rating of buildings might have on the asset value of the portfolio investment made by major property investors. Generally such companies, whilst endeavouring to achieve a value for money development, do adhere to sound construction economics – investing in energy efficiency where cost-effective. To suddenly impose in a rather short period, certainly in terms of development life span, a rating system is, I believe, draconian to say the least.

I am also concerned that the method of precisely how, mathematically, these various buildings are going to be modelled without the system being so simplified that it is open to wide interpretation, which will then defeat the very objective being championed. Whilst comparisons are certainly helpful, they need to be compared by skilled practitioners and not by unqualified individuals.

Some practitioners might be rubbing their hands with glee thinking, this proposal will feed lots of commissions from clients to survey and assess buildings when they are sold, leased or refurbished. But I say to my colleagues, think carefully. There might indeed be some new commissions generated by this proposal in the short-term, and an on-going need for our involvement in property transactions. However, we have suffered heavily in the past from the withdrawal from the market of property investors, both large and small. This could have a far greater impact than the smaller commissions proposed from assessments.

So after all the criticism, what do we propose?

The new Building Regulations have moved the agenda considerably further forward and further amendments are in the pipeline to enhance the energy performance of new and refurbished buildings. I believe this is the correct way of leading us towards a more sustainable future.

Energy efficiency in buildings – Applied Energy designed and installed a closed loop geothermal heating and cooling system for a major new commercial building in Croydon. The company calculated that a geothermal solution would give higher overall efficiencies than a conventional system. The picture shows geothermal loops entering the building onto a pipework header.

I believe the most effective way to promote energy efficiency is through the market price. Energy is still cheap in terms of building operating costs, particularly for leased office space. We know that the Chancellor is not going to influence price with further taxation, for fear of creating wider economic damage. But why not widen the Climate Change Levy to cover the sale or lease of commercial property which can be reclaimed in full by the implementation of energy efficiency measures. This refund would make provision for a survey both prior to, and post, implementation of the works in order to secure the reclaim. So my fellow professionals now rub your hands with glee! This would enable us to excel at what we do, and really do our bit for this worthy cause, rather than just the rating of buildings as now proposed.

Contact Geoff Peters at Applied Energy at email: geoff@appliedenergy.co.uk

Emissions reductions can be kept on track

The Government's Energy White Paper had still not appeared at the time of writing – it may have done since. Among the enormous volume of advice offered to the Government was a paper by the Institute of Public Policy Research (IPPR):* The Generation Gap. *Edited extracts from the summary of the report are given below.

By 2020, the UK is projected to lose a sizeable proportion of its current electricity generating capacity. Most of Britain's ageing nuclear power stations are due for retirement by 2020, when only three are scheduled still to be open. To make matters harder, many of the UK's coal power stations will also be phased out over the same period because of the effects of the EU Large Combustion Plant Directive. In many cases, it will be cheaper for plant owners to close the power stations rather than install the emissions-reducing technology required by the Directive.

This raises the question of what – if anything – the Government should do about Britain's looming electricity 'generation gap'; and this is, in many ways, the central issue facing the Government in its forthcoming energy White Paper. This report seeks to answer the question by examining four different scenarios for what the UK's electricity generation sector might look like in 2020.

The scenarios

Business as usual sets out an energy future in which energy decisions are left almost entirely to the market. Accordingly, the scenario exhibits high demand for electricity at some 500 terawatt hours (TWh) per year, an increase of 25% on present levels. In this scenario, most of the 2020 electricity generation gap is filled by default with gas-fired generation; there is no programme of new nuclear build, and a low commitment to renewables (which provide just 10% of 2020 electricity generation).

The nuclear option sets out a future that takes emissions reductions and gas import dependency levels seriously, but is sceptical of how much can be achieved through renewables and energy efficiency. Electricity demand in this option is 444 TWh; renewables provide 15% of this. As the name implies, the scenario includes an extensive programme of new nuclear build (10% of electricity generated) in order to plug the generation gap whilst also limiting emissions and dependence on imported gas. The scenario hence assumes a willingness to intervene in the market to create a framework for new nuclear.

Clean and green similarly assumes the need for serious emissions reductions, a medium level of gas import dependence and a limited willingness to intervene in the market in order to pursue policy objectives beyond the purely economic. Here, though, new nuclear is ruled out as a result of a strong commitment to environmental sustainability. Instead the scenario shows a high level of commitment to renewables (which provide 25% of electricity generated) and energy efficiency (overall demand is limited to 384 TWh, the effect of successfully implementing the target proposed by the Performance and Innovation Unit of a 20% efficiency improvement by 2010 with another 20% by 2020).

Fortress Britain is concerned primarily with minimising gas import dependence. Accordingly, the scenario assumes both the sustained programme of new nuclear build set out in the 'nuclear option' (which provides 10% of electricity) *and* the policies to support renewables (25%) and energy efficiency (with demand at 384 TWh) set out in 'clean and green'. Accordingly, this scenario is characterised by very high willingness on the part of Government to intervene in the market.

Conclusions

The scenarios suggest it is possible to remain on track for complying with a 60% UK emissions reduction commitment by 2050 whilst ensuring security of supply and without compromising affordability.

Making a choice about which of the scenarios is most preferable depends on the question of what the Government is trying to achieve with its energy policy. The Government's stated energy policy objectives (security, diversity, sustainability and competitive markets) do not always point the same way. Given the overwhelming importance of climate change, the report argues that the Government should use the White Paper to clarify the order of priority that applies to its four energy policy objectives by defining the goal of energy policy as a "secure, affordable transition to a zero carbon economy".

However, achieving this goal will require a revolution in political commitment. Above all, it will be action taken on the energy efficiency front that will be of most importance to achievement of *all* of the Government's objectives in energy policy. The most significant variance in total energy costs, carbon dioxide emissions and gas import dependency between the four scenarios is accounted for by total electricity demand levels. This finding gives support to the PIU's emphasis on the overriding importance of effecting demand reductions.

A strong commitment to renewable energy will pay substantial dividends in reducing emissions and gas import dependency. The report therefore recommends that the Government should use the Energy White Paper to announce a target of 25% of electricity to come from renewable sources by 2020.

Although nuclear can obviously contribute to reducing emissions and limiting gas import dependency, the report argues that, in the broader context, its environmental sustainability and contribution to security remain low. Whilst the report sees a case for using plant life extensions on existing reactors which are already in place, the report argues that three factors mitigate strongly against new nuclear build:

- the unproven nature of the new reactors proposed by the nuclear industry;
- the vulnerability of nuclear installations to attack in the changed security environment; and
- the continuing lack of any progress towards a solution to Britain's long-term radioactive waste management strategy.

See the full report at www.ippr.org

European industry faces requirer

The European Council of Environment Ministers have unanimously agreed on the details to establish the first multi-national emissions trading scheme for carbon dioxide. The proposed EU scheme is likely to cover 40% of European carbon dioxide emissions. It has been estimated this will create carbon assets and liabilities worth in the region several billion euros. The scheme for major carbon dioxide emitters looks increasingly certain to begin operating from January 2005. It may also recognise emission reduction credits generated by international emission reduction projects (known as JI and CDM projects) from its commencement, according to a legal briefing issued by London solicitors Baker & McKenzie.

The development of the EU Emissions Trading Scheme (ETS) was given a major boost forward during the meeting of the Council of Environment Ministers of the European Union last December. It is now widely believed that, despite being a part of a wider European Climate Change Programme (ECCP) and one of a range of measures the EU is adopting, the EU ETS is the key to the EU being able to cut its emissions of the six greenhouse gases by an average of 8% below the 1990 levels between 2008 and 2012, thereby meeting its commitments under the Kyoto Protocol. The development of this proposed directive has proceeded at an almost unprecedented speed.

The Council's unanimous decision takes the EU one step closer to imposing a significant range of financial liabilities in Europe for emissions of carbon dioxide (the predominant greenhouse gas controlled under the Kyoto Protocol). The European Parliament can still propose changes at the second reading, but it is widely agreed that the main political hurdle has now been cleared and the Directive is almost certain to become law during 2003.

The EU ETS will require each member state to impose binding caps on emissions of carbon dioxide from facilities involved in:

- energy activities;
- the production and processing of ferrous metals;
- the mineral industry (for example cement, glass or ceramic production); or
- pulp, paper or board production.

The EU ETS will, however, have implications for all businesses, as energy producers may seek to pass on the associated costs of compliance to their customers. The basis for determining liabilities of individual facilities is to be national allocation plans which will set emissions caps and allowance allocations in each Member State, but which are unlikely to be finalised before late 2004. The Commission has promised to develop allocation criteria by December this year for Member States to follow in drawing up the plans. The Commission will retain a right of veto over these plans, so individual member states are likely to have little room to manoeuvre in selling targets and allocations. Unless obligated businesses start planning now to address these as yet to be defined emissions caps they may find it difficult to meet these targets.

Trading emissions allowances

However, obligated facilities will be able to trade EU carbon dioxide 'allowances' within the 15-nation bloc to help them meet their binding caps. Failure to meet the emissions caps will result in heavy penalties of 40 and 100 euros from 2008 for each tonne of carbon dioxide by which they exceed their caps. These EU carbon allowances will be a common carbon currency and must, like the euro, be recognised in all EU member states, so companies will be able to trade them across the whole of the EU.

Traders are already brokering speculative deals between companies around the world, where carbon dioxide allowances/credits are changing hands for up to five euros a tonne. Yesterday's agreement is likely to stimulate greater levels of such trading possibly by businesses seeking to buy early rights to EU carbon allowances at potentially lower prices, in order to hedge their prospective carbon liabilities under the pending EU ETS.

Until last December, the main obstacle to the EU ETS was German opposition due to concerns that its adoption would negate voluntary agreements already in place with industry. The common position was made possible after the EU Commission and the German Government reached a last minute compromise deal when the German Government successfully negotiated key concessions that relate to existing long-term climate change agreements between the German Government and industry. The main concession is that industries will be able to form collective pools to trade emission allowances. However, no Member State will be able to force companies to join trading pools and firms will be able to buy and sell emission rights individually if they wish. Here there are close parallels with the position under the UK's existing Climate Change Negotiated Agreements where, given the option, very few industry sectors have chosen to operate as a pool.

Another concession is that installations and/or individual industry sectors will be able to opt out of the scheme for the first period running to 2007. However, the Commission will retain the right to veto such opt-outs and exempted installations must commit to equivalent emissions cuts and be subject to the same reporting and verification requirements, carrying equivalent penalties for non-compliance. It is not difficult to see that this is designed to accommodate countries such as the UK which already have incompatible emissions trading schemes in place.

The first phase of trading will occur between 2005 and 2007 and the second phase will operate from 2008 to 2012. Further phases of five year trading periods should continue thereafter, but probably subject to international agreement on future emissions cuts

Finally, from 2008 Member States can apply to include greenhouse gases other than carbon dioxide in national trading and bring in additional sectors such as chemicals or aluminium production. Again, the Commission is to retain a right of veto over any such extension. Proposed extensions will be judged by the Commission on

nent to manage carbon liabilities

grounds of environmental integrity

Linking JI/CDM to emissions trading

Emissions trading is one of three 'flexible mechanisms' which those developed countries which have taken on commitments under the Kyoto Protocol may use to help them meet their targets. The other two are Joint Implementation (JI) and the Clean Development Mechanism (CDM) projects. Emission reduction units generated by JI projects (projects between developed countries) and certified emission reductions generated by CDM projects (projects between developed and developing countries), referred to collectively as 'credits', will also be valuable for off-setting countries' commitments under the Kyoto Protocol.

Key stakeholders constitute the Working Group on JI/CDM for the European Climate Change Programme. In November 2002 the Working Group made a number of recommendations to the EU Commission supporting the linking of JI and CDM 'credits' to the EU ETS.

In particular, it stated that: "The early adoption of legislation regarding the recognition of project credits should be pursued as a matter of particular priority. The Commission should aim to make its proposal for a directive linking JI/CDM credits with the EU Emissions Trading Scheme early in 2003. The Council and the European Parliament should aim at adopting this legislation so as to allow its implementation as from the commencement date of the EU Emissions Trading Scheme".

The proposed EU ETS currently contains severe penalties for those installations that do not meet their emission reduction obligations under the Scheme. Importantly, credits generated by JI/CDM projects could be used by operators to fulfil their obligations. The linking of JI/CDM projects to the EU ETS, particularly recognition of certified emissions production (CERs) from CDM projects, will be key in driving global demand for project-based credits and is likely to be key to the success of the fledging JI/CDM markets.

The Working Group also stated that emission reductions that fall outside the scope of the community emissions trading scheme, that is from domestic project-based activities, should not be neglected and should be further analysed.

The key to success for JI/CDM projects to generate and retain credits will be to ensure the legal criteria established by the Kyoto Protocol, the Marrakesh Accords and the EU Directives and Member State Schemes are complied with. The EU Commission is currently working on a proposed directive on JI/CDM to supplement the proposed EU ETS directive.

Contact Baker & McKenzie at email: london.info@bakernet.com

Complete EU energy liberalisation 'by mid-2007'

Meanwhile, EU Energy Ministers agreed last November to complete the opening of European energy markets to competition. Key elements of the agreement were:

- the decision to open energy markets for domestic customers by mid-2007; and
- new provisions for the legal separation of energy transmission and distribution system operations.

Both moves should increase access to the electricity grid for new producers.

The latter, known as 'unbundling', will bring an end to the current arrangements under which the same company can control access to key infrastructure – such as pipelines and transmission wires – as well as use it to supply customers. Markets in England and Wales already have this provision, but the absence of it across the EU has created a major barrier to UK companies accessing European markets. The new regime will eventually provide them with transparent access to pipelines and wires, so that they can access new consumer markets as well as transport gas and electricity across Europe.

Full liberalisation is also expected to support green energy suppliers, although draft requirements for electricity suppliers to flag up power sources to consumers fell short of those proposed by the renewable energy sector.

Suppliers will have to specify in bills and promotional materials the contribution of each energy source. While the text will also encourage them to list information on environmental impacts, this is not required, allowing instead a 'reference' to other information sources as an alternative.

The European Commission will be asked to report by January 2006 on experience with market liberalisation. It could, if necessary, propose further measures to ensure full independence of network operations and effective, non-discriminatory network access, as well as making further recommendations on how electricity labelling is implemented.

In another move, the European Commission has taken the first step towards possible reform of EU energy subsidies, by producing an inventory of all forms of state support provided to the fossil fuel, renewable and nuclear energy sectors, reports *Environment Daily*.

The document is significant as a clear statement that all types of subsidy to all power sources are now firmly under Commission scrutiny. The Commission says the inventory may "provide the starting point for a reform of national and EU aid schemes".

In recent years, MEPs, environmentalists, international bodies such as the OECD and, increasingly, member state governments have been asking for the support granted to different energy sources to be made more transparent.

Consolidation – helping smaller

A new breed of 'consolidators', energy trading companies which provide risk management services to smaller power generators, has emerged in the last year or two. They may hold the key to helping CHP and renewables companies being able to compete with larger players in the highly competitive and fiendishly complex UK electricity market. We hear from one of the consolidators – SmartestEnergy.

When the new electricity trading arrangements (NETA) came into force in March 2001, the market for electricity changed overnight.

Trading under NETA meant that the comfortable security of a guaranteed fixed price for plant generating variable power output and NFFO (Non-Fossil Fuel Obligation) contracts for new renewable plant, were no longer available. Instead, every generator now had to enter into a bi-lateral contract for its exported power.

Smaller and renewable generators such as landfill gas and CHP operators were having to face the fact that a relatively secure, additional income stream was now, potentially, a high risk business which could end up being loss-making if the wrong decisions were made. For these smaller electricity producers for whom power generation was not their core activity, knowing whom to trade with, when to trade and at what price, was becoming a real challenge.

In addition, there were financial penalties for generators who either failed to physically deliver the contracted output or who supplied more power than they had contracted to sell. This raised the stakes considerably and to such an extent that some wind power generators found that they could actually end up paying for the electricity they spilt onto the system.

At the same time as the introduction of NETA, Climate Change Levy-Exempt Certificates (LECs), were introduced which had to be traded with the associated electricity. This meant that generators could only sell the LECs to Balancing & Settlement Code (BSC) parties, which had the effect of restricting the number of possible counter-parties to any trade, thus limiting the liquidity of the LEC market.

The arrival in April 2002 of Renewable Obligation Certificates (ROCs), which could be traded in their own right and separated from the actual electricity they related to, only served to add another layer of complexity.

Emerging consolidators

Against this background, SmartestEnergy was established to operate as a 'consolidator' in the new energy market.

It was very much in line with Government and Ofgem's thinking that this new breed of players, would establish themselves in the marketplace to represent licence-exempt generators and provide risk management services to them. Interestingly, looking at the Ofgem website today, almost two years after NETA came into effect, there are only seven consolidators listed and, of them, perhaps only four are active players.

The main reason for this is that the risks for consolidators are considerable. They are, in effect, principals and therefore liable for any penalties incurred by their customers. Yet the costs of setting up in terms of skilled operators, experienced traders and the extensive investment in IT systems to monitor plant output on a 24/7 basis have proved to be an effective barrier to entry.

Another barrier to entry was the fact that independent consolidators relied on their competitors, namely the supply companies, to lay off their risks. As a first mover in the sector, SmartestEnergy cultivated a number of close relationships with different supply companies who did not feel the need to participate aggressively in this sector. This dependency will reduce in time as modifications to the BSC, NGC (National Grid Company) charging methodologies and HM Customs and Excise rules which cover LECs, will relieve consolidators of this obligation.

Managing risk

Managing the imbalance is crucial to the value of the generators' electricity. To put imbalance penalties into context, although a generator may be paid £16/MWh for their generated output, the cost of imbalance could be a penalty of well over £100/MWh when they under-generates against their contract. Invariably, the generator requires someone to manage this risk and the solution offered by SmartestEnergy includes the following elements:

- providing price information to assist the generator in deciding when is the most appropriate time to enter into a contract;
- handling external contract negotiations, including credit exposure with Elexon and liaison with NGC;
- securing the best possible price for its client, splitting out the generated output, embedded benefits, LECs and the ROCs where advantageous and passing them on to other parties;
- guaranteeing to take 100% of the exposure where actual output falls short of (or exceeds) contracted output and financially incentivising the plant to generate close to its nominated output;
- monitoring plant output on a 24/7 basis through its energy management centre, maintaining telephone dialogue with the plant on a regular basis; and
- offering both short and long term contracts.

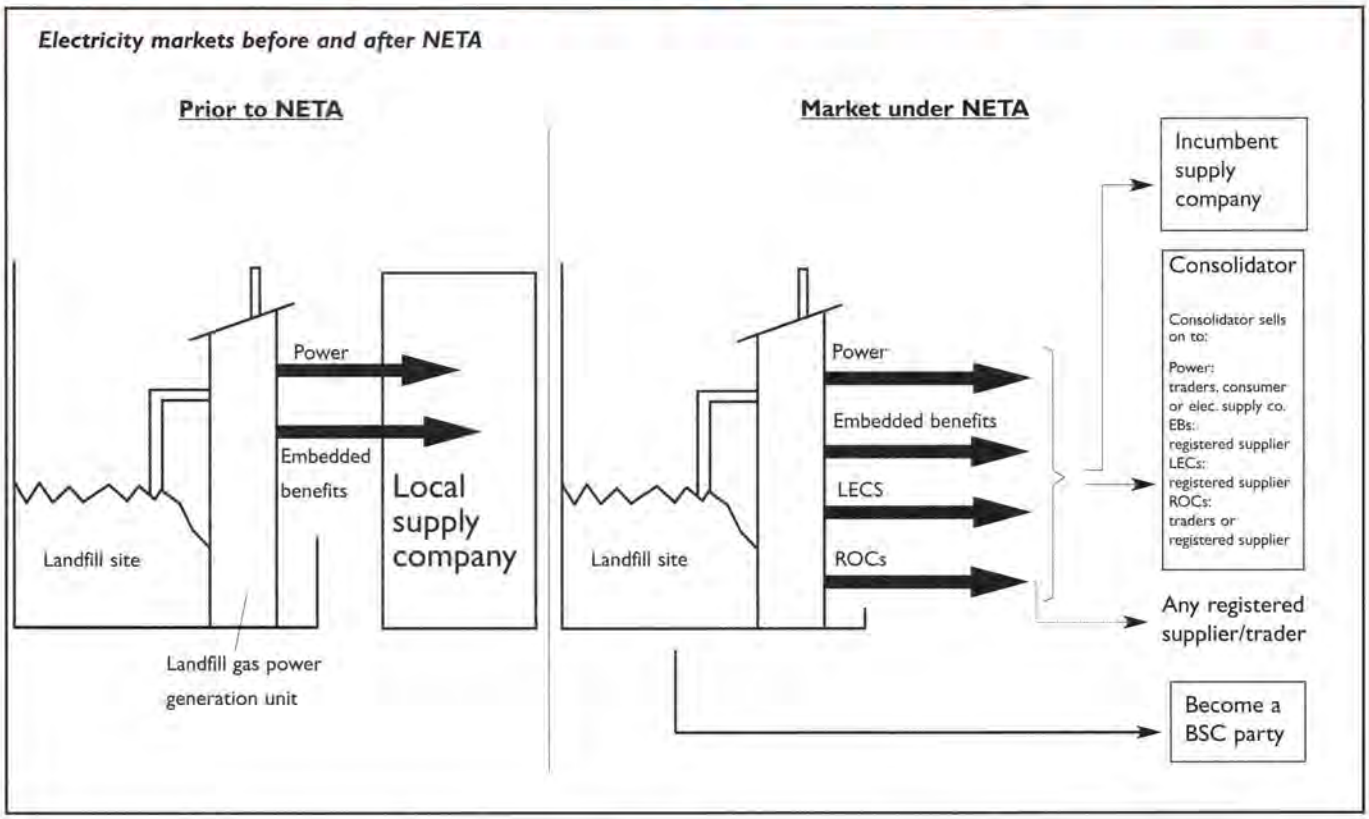
In the past few months, SmartestEnergy has been able to build on its portfolio by taking over – at short notice – a number of the export power contracts which were left in the hands of the administrators of TXU Europe.

CHP and renewables generators

Two of the company's biggest customers are British Sugar and Viridor Waste Management. British Sugar operates six production factories throughout the UK. All of these are powered by on-site CHP units and the surplus electricity coming from these sites is sold into the market by SmartestEnergy.

It was a similar story at Viridor, a leading landfill site operator in the UK and one of the pioneers of landfill gas for

generators to cope with NETA



electricity production. Today it generates 28 MW from 19 sites but, with the arrival of NETA, the company recognised that it needed outside support to help secure the best long-term solution for maximising the value of its new sites.

Future expansion

It is clear that this range of services would also be advantageous to wind generators. The planned expansion within the UK wind sector by independent developers is likely to provide a fertile trading ground, with more wind plant exposed to the merchant electricity market and therefore subject to the same risks as other smaller generators.

At a recent seminar hosted by SmartestEnergy it was confirmed that licence-exempt generators stand to benefit from planned changes to the regulations governing smaller and renewable generators in 2003. However, as the sector continues to face major challenges during a period of increased risk and depressed wholesale power prices, it is vital that Government delivers significant support to the sector in the forthcoming Energy White Paper.

On the positive side, it was confirmed that the BSC which determines how electricity is traded under NETA, is continuing to be modified in a way which demonstrates the commitment by the market to create a more level playing field. Despite the fact that total exports of CHP-generated power had fallen by 34% in the year that NETA was introduced, a number of changes to the Climate Change Levy regime planned for introduction in 2003, will provide some relief for the beleaguered CHP sector.

As confirmed in the April 2002 budget, all power produced by CHP plants will be exempt from the Climate Change Levy. Regulations now in preparation will introduce LECs on the basis of one LEC for one MWh of qualifying power for all plants in the CHP sector.

One of the major worries for renewable generators is the forthcoming DTI review. There is still a question mark over ROC values long-term, due to factors such as the extension of co-firing (the combustion of biomass matter simultaneously with fossil fuels, the biomass part of which qualifies for ROCs), which is currently permitted until 2006, and the potential relaxing of the requirement to use energy crops. This is having a major impact on the sector.

Also, the fact that there are only a handful of ROC buyers in the sector (namely, the large, vertically-integrated supply companies), raises important market power issues.

SmartestEnergy's Alex Green concluded the seminar, "Despite some concern over the ROC market in the short-term, the increased availability of LECs from CHP generators and the forthcoming revisions to various aspects of rules governing the embedded generation sector should mean that 2003 offers better prospects for the sector as a whole. However, there remains much to be done by Government and regulators to level the playing field for renewable and CHP generators, and to deliver sustained growth in a sector that is vital to securing this country's carbon emission targets."

Contact SmartestEnergy at website: www.smartestenergy.com

The long, hard road towards choice

Paul Anderson, Energy Information Centre (EIC)

Competition in the gas and electricity markets is now taken for granted – not so for water. Here, Paul Anderson looks at progress that has been made in delivering competition to the water industry.

The water industry has been privatised for over a decade now, and for most of that time little has shaken the water and sewerage suppliers' domination of their regional principalities. This is despite one form of competition, inset appointments, being available almost as long as privatisation. An inset appointment allows one supplier to be replaced by another through alteration of each party's licence. Each appointment is site-specific and contingent on it either using over 100 megalitres in England or 250 megalitres in Wales, being a greenfield site, or that the incumbent agrees to the transfer. The number of users able to take advantage of this scheme is limited and the regulatory hoops one must jump through to obtain an appointment are complex and time consuming.

This sums up why, on average, only one site a year has been able to choose a supplier in this way. One could hardly call inset appointments a successful venture.

A clearly-defined competitive framework had been promised in the shape of the Utilities Act. However, in 2000 water was expunged from the Act with a promise that a separate, water-specific, bill would be presented in due course.

Common carriage

In the meantime, with the publication of the Competition Act 1998, the concept of 'common carriage' was applied to the water industry. This allows one supplier to use the network or other assets of another. The Competition Act made it illegal for incumbents to deny access without justification or under unreasonable terms. However, the devil is always in the detail and the definition of what exactly is justified or unreasonable has complicated the uptake of common carriage. This has been caused, predominantly, by the network access codes which define the terms under which their facilities can be used.

The first wave of these was perceived as restrictive and, in a number of cases, actually non-competitive. In addition, there were multiple codes published – one for each supplier. This created significant complications for new entrants seeking to obtain national contracts. Above all though, when common carriage negotiations were attempted, the prices for access presented were unworkable.

Entering this seething pit of frustration came EIC's Water Competition Action Group (WCAG). Created for and from EIC's membership and guided by EIC's water expertise it quickly became seen as a strong and well-informed lobbying body. All the time it highlighted the undeniable need and desire of industrial and commercial users for choice, and promoted the speedy delivery of a water bill that addressed this.

In discussions, though, it became increasingly clear that many parts of Government did not share our urgency for change. Indeed, one could almost believe that they wished the issue would go away.

The previous Water Minster, Michael Meacher, indicated in March 2002 that the Water Bill would initially limit access to choice to the non-domestic sector, in order to overcome some of the quality, security and technical issues which had delayed progress.

This was not an unwelcome announcement, but it was galling to see that the threshold for access would, at first, be limited to those using over 50 megalitres a year, making the initial market opening around 2,000 sites. The Bill would present scope for a reduction of the threshold but only if it was deemed safe to do so.

Killing competition

A subsequent Defra consultation in the latter half of 2002 was released, over two years after a bill was promised. EIC took this opportunity, along with many others, to argue that this was too small a market to start with, and that it would not entice new entrants to take part in competition. Indeed, those suppliers that had sprung up, like Enviro-Logic and AquaVitae, may withdraw if they perceive that the potential for participation was slight. Such a threshold ran the risk of killing, rather than promoting, the development of competition.

Despite such protestations it seems clear that when the Bill is finally presented to Parliament, expected in the spring, that it will still contain this very high initial threshold. However, it will also provide Ofwat with a stronger pro-competition remit and it is hoped the regulator will use this to sort out the network codes – as a market of whatever size will not work until this is done.

Ofwat has already made progress, last year publishing a guide for the second wave of codes in order to give them a more uniform structure. However, the regulator has not stipulated which method the incumbent can charge for access, leaving the costs involved still restrictive.

After years of virtually no possibility of competition it is heartening to see that the last two have seen significant developments. The situation may be far from perfect but at least one can see some faint daylight over the horizon. The next few years will be vital to ensure that whatever competition is available is allowed to develop rather than wither and die.

Contact Leo Gibbons at EIC on tel: 01638 554907, email: lgibbons@eic.co.uk

Energy Information Centre

Established in 1975, the EIC provides utilities market information and support to business energy users. Its membership represents over 13,00 sites and more than 20% of UK utility markets.

www.co2sequestration.info

This would be an excellent place to start when finding out what's already happening around the world on carbon dioxide sequestration. Run by the International Energy Agency's Greenhouse Gas R&D Programme, this new website is an information database which aims to promote awareness of the research, development and demonstration activities already underway, by listing all known projects. The site also contains a lot of useful descriptive material.

The database currently contains details of 84 live or completed projects in five categories – and may surprise visitors with the extent of activity underway.

www.pilottaskforce.co.uk

Hands up who knows much about current efforts to keep Britain's offshore oil and gas industry healthy, productive and profitable. PILOT is a joint government/industry initiative aiming to improve competitiveness – it has recently re-launched its website with a new format and features.

With Britain's oil production at or close to its peak, the industry is putting considerable effort into maximising the economic recovery of remaining reserves. The website directs visitors to all workgroup documents, meeting agenda and minutes; as well as information on member companies and links to associated organisations.

www.pca-online.org

Not all of America ignores Kyoto. The 'Partnership for Climate Action' (PCA), a group of major companies committed to taking action on climate change, launched a new website last November. PCA members include Alcan, BP, DuPont, Entergy, Ontario Power Generation, Shell International, and Suncor Energy, in partnership with the advocacy group Environmental Defense. Together, the eight companies say they emitted more than 390 million tonnes of carbon dioxide equivalent in 1990, slightly less than Australia and slightly more than Spain. By 2000, these same companies had reduced their net emissions by nearly 17%.

The website outlines the PCA's goals and commitments, provides a library of PCA publications available for download, and provides an overview of each member company.

www.lowcvp.org.uk

In the transport field, the new 'Low Carbon Vehicle Partnership' (LowCVP), an "advisory and action body" to promote the shift to clean low carbon vehicles and fuels, has launched its website. This outlines the mission to shape UK policy and action on mainstream low carbon motoring through a partnership of industry, Government, the academic research community, NGOs and consumers.

The Partnership's tasks include encouraging industries and other stakeholders to engage proactively in the move to low-carbon vehicles and fuels, and to provide a forum in which stakeholders can work together in overcoming market barriers affecting the shift to new vehicles and fuels. Immediate tasks are to advise Government on setting targets for ultra low carbon cars in 2020, fostering markets for cleaner buses, and compiling targets for the supply chain for low carbon vehicles.

www.oursouthwest.com

The website for the Government Office for the South West, in Bristol, is listed here because of its hosting of a guide to 'worst practice' in energy management. Written by John Pooley of the John Pooley Consultancy, the not-quite-serious guide tells Energy Managers all they need to know to fail.

John has compiled the paper from his observation of energy and environmental management practice in real companies. Starting with the observation that "worst practice is the synergistic combination of many elements of bad practice", John tells Energy Managers how to "ensure that no-one owns the energy management policy" and how giving environmental responsibility to overloaded, lower level, employees is a recipe for inaction. With care, a conscientious Energy Manager might be able to pick a path towards best practice by doing the opposite to what is recommended here.

Events

March 2003

Reducing the impact of the climate change levy
Workshop, 4 March, Leeds
Contact: Institute of Energy
Tel: 020 7580 0008
Email:
events@instenergy.org.uk

InstE Branch Event
Indoor air quality in hospitals
Technical seminar, date tbc
Contact: Hong Kong Branch
- Dr Michael Leung
Email: mkhleung@hkucc.hku.hk

Electric Power 2003
Conference, 4-6 March
Texas, USA
Email:
epexpo@tradefairgroup.com
www.electricpowerexpo.com

InstE Branch Event
Annual dinner
Dinner, 5 March
Contact: Northern Ireland Branch - Ciaran McGrath
Email:
mcgrathc@belfastcity.gov.uk

World sustainable energy day
Conference, 5-7 March, Austria
Tel: 43 732 7720 14380
Email: office@esv.or.at

InstE Branch Event
Climate change levy and carbon trading - an update on developments
Date and venue tbc
Contact: London and Home Counties Branch - Matt Leach
Tel: 020 7594 9328
Email: m.leach@ic.ac.uk

InstE Branch Event
Fuel economy improvers - fact or fiction
11 March, Wakefield
Contact: Yorkshire Branch
- Andrew Mallalieu
Email:
barbarab@evansu1.f9.co.uk

InstE Branch Event
Young persons' short paper evening
13 March, Cardiff University
Contact: South Wales and West of England Branch
- Prof N Syred
Tel: 029 2087 4318
Email: syredn@cardiff.ac.uk

InstE Branch Event
MicroCHP and fuel cell technologies
Seminar, 13 March, Birmingham
Contact: Midlands Branch
- Vian Davys
Tel: 01970 617585
Email: vian.davys@pgen.com

Industrial air pollution monitoring
Short course, 17-19 March
Leeds
Contact: University of Leeds
Tel: 0113 343 2494
Email:
m.j.bannister@leeds.ac.uk

Emissions monitoring
Exhibition, 18 March, Leeds
Contact: University of Leeds
Tel: 0113 343 2494
Email:
m.j.bannister@leeds.ac.uk

Efficiency and flexibility of energy use in the iron and steel industry
18-19 March, The Netherlands
Contact: Rhine Energy
Tel/fax: 0121 441 3865
Email: rhinenergy@aol.com

Environmental challenges: opportunities for the UK gas industry
Conference, 18 March, London
Contact: SBGI
Tel: 01926 334357
Email: claire@sbgi.org.uk
Supported by the Institute of Energy

The multi-utility experience
19 March
Contact: Energy Industries Club
Tel/fax: 01622 858762

International sustainable development
Conference, 24-25 March
Nottingham
Contact: ERP Environment
Tel: 01274 530408
Email:
elaine@erpenv.demon.co.uk

Bringing energy efficiency to the liberalised markets
Conference, 27-28 March
Brussels
Email: christian.radtke@
wupperinst.org

InstE Branch Event
Annual dinner
28 March, Frodsham
Contact: North West Branch
- David Armstrong
Tel: 0161 485 1127
Email: david@armstrong1001
.freeserve.co.uk

April 2003

InstE Branch Event
Incineration plants in Guangzhou Energy Research Institute and Macau
Technical visit, date tbc
Contact: Hong Kong Branch
- Mr. K T Leung
Email: leungkt@hkairport.com

InstE Branch Event
Branch AGM - followed by a meeting to discuss the Energy Policy White Paper
Date tbc, London
Contact: London and Home Counties Branch - Matt Leach
Tel: 020 7594 9328
Email: m.leach@ic.ac.uk

Photovoltaic science, applications and technology
3-4 April, Loughborough University
Contact: Christiane Buckle
Tel: 01865 484367
Email: uk-ises@brookes.ac.uk

Climate change our business
Conference, 8-9 April
Birmingham
Contact: Tony McNally
Tel: 02476 279000
Email:
tony.mcnally@proenviro.co.uk
Supported by the Institute of Energy

ET2003
Exhibition, 8-10 April
Birmingham
Contact: Faversham House Group
Tel: 020 8651 7168
Email: et2003@fav-house.com
Supported by the Institute of Energy

InstE Branch Event
Works visit and branch AGM
10 April, Birmingham Airport
Contact: Midlands Branch
- Vian Davys
Tel: 01970 617585
Email: vian.davys@pgen.com

Business and energy
16 April
Contact: Energy Industries Club
Tel/Fax: 01622 858762

InstE Branch Event
Technical visit - Ballylumford Power Station
23 April
Contact: Northern Ireland Branch - Ciaran McGrath
Email: mcgrathc@belfastcity.gov.uk

Professional practice for sustainable development
Short course, 28 April, London
Contact: Institute of Energy
Tel: 020 7580 0008
Email: events@instenergy.org.uk

InstE Branch Event
Geothermal energy
29 April, venue tbc
Contact: North West Branch - David Armstrong
Tel: 0161 485 1127
Email: david@armstrong1001.freeserve.co.uk

Registering on an event seen here?
If you are registering on an event which you have seen listed here, please don't forget to mention to the organisers that you saw it listed in the *Energy World* Events Diary.
For further information about events, and to view the Institute of Energy's events calendar please click on to our website at www.instenergy.org.uk/eventscalendar.htm

CPD – are you keeping up to date?

With the pace of change getting to us all, it is easy to get out of touch with some of the developments of relevance to our day-to-day work. The CPD record card issued in your January *Energy World* should help to prompt you to seek out appropriate training opportunities and record their benefits. At the InstE we are always happy to help members identify relevant training courses and increasingly we find providers who we can approve to offer training that is particularly appropriate for CPD purposes.

An example is a recent course on Community heating with CHP run as part of the Government's Community Energy Programme by BRE's Sustainable Energy Centre (BRESEC). Because of its success, other courses are planned in Manchester (4/5 March) and Edinburgh (25/26 March). The course is free and will be particularly useful to consultant engineers and local authority executives responsible for planning, policy and technical aspects. For further information contact communityenergy@est.co.uk.

Please don't hesitate to let us know of any other courses that you think would be of interest to members. We are always happy to undertake CPD approval visits should the organisers wish to have InstE approval. For more details contact education@instenergy.org.uk.

Professional practice for sustainable development

This one day course is designed to enhance participants' understanding of sustainable development and includes the use of case studies from business and industry to illustrate how sustainable development is currently being applied.

Participants of this course will:

- improve their awareness of sustainable development principles;
- understand the implications and benefits of sustainable development in their work and business activities;
- increase their knowledge of sustainable development tools; and
- have a personal action plan for implementation at work.

The Institute of Energy will be holding this course on Monday 28 April at its offices in London. For further information, please contact the events office on 020 7580 0008 or email events@instenergy.org.uk to register your interest and receive a course programme.

Energy zone at et2003

ET2003 the UK's environmental technology and management services exhibition, has been expanded this year to include a new Energy Zone, hosted by the Institute of Energy. Following the success of et2002's dedicated Information Zones for air, EMS and waste, a series of free seminars addressing a wide range of current environmental issues will be held throughout the exhibition in each of the Zones. The exhibition takes place at the Birmingham NEC from 8 to 10 April and brings together over 150 of the UK's key environmental and energy suppliers, providing industry, local authorities and other public and private sector organisations with the ideal opportunity to find out about the latest products and services on offer.

Topics to be covered in the Energy Zone include the Climate Change Levy, educating the workforce on energy efficiency, energy policy, professional recognition and raising your profile within the industry and an introduction to sustainable development.

The exhibition is also co-located with the annual Climate Change Our Business conference which is being held on the 8 and 9 April which also takes place at the NEC.

Visit www.et-expo.co.uk for further information about the show, online pre-registration for fast-track entry to et2003 and to book a place at the Climate Change Our Business conference.

Merger – the next steps forward

It was with a sense of hope and expectation that I wrote to you in January in the belief that we as members of the Institute of Energy had the opportunity to create something new and exciting by voting for the merger with the Institute of Petroleum. The detailed results were published on the respective websites shortly after the voting period closed and it is with a sense of pride that I acknowledge over 2000 of our members voted and, overwhelmingly, almost 95% were in favour of the merger. This positive attitude was also reflected by the members of the Institute of Petroleum, where of some 3000 votes received, over 94% were in favour. We have taken that first step and with this very positive mandate we can now start laying the promised foundations for the future of the Energy Institute and for all energy professionals.

The work has already begun and as you read this we are approaching the SGM on 6th March, notice of which was given through February *Energy World* and published on the website. In addition to noting the result of the membership vote the principal business to transact is the approval of the draft Royal Charter and Bye-Laws of the Energy Institute, submission to the Privy Council and the necessary approvals leading to the granting of a new Charter. This is in line with the provisional timetable set out in the Prospectus but, over and above these formal approvals, we need to ensure that the practical issues of the merger are addressed effectively, efficiently and in a timely manner. To this end a meeting of senior trustees headed by John Blackhall and Pierre Jungels, the Presidents of InstE and IP respectively, was held on 5th February to discuss and agree the approach to and the implementation of merger integration. This group will evolve into the new Interim Council (IC) subject to confirmation by the respective Councils of the nominees from each, and thereafter meet at regular intervals to manage the merger process.

By drawing on the expertise of not only IC members, but also of the respective Councils, branches, members and staff, Working Groups will be established, reporting to the IC, to ensure momentum, direction and accountability in the key work streams, including:

- governance;
- strategy and performance;
- communications;
- operations and HR;
- IT;
- technical affairs;
- finance;
- legal;
- membership services; and
- branches.

External advisers will be appointed in accordance with specific briefs as appropriate, but each work stream will have an executive owner and an IC member as liaison who will be directly accountable for performance and progress. Effective management and co-ordination of these work streams are essential if we are to meet the short-term deadlines and objectives and ensure that the foundations are laid to deliver the promises made in the Prospectus.

The branch network and membership services work streams are key to encouraging the wider practical involvement of branch members in the merger process, allowing them the opportunity to be instrumental in shaping their future aspirations.

One of the most important of the work streams will be communications, as we seek to ensure that members, customers, stakeholders and staff are kept as fully up to date and informed of progress as possible. Through websites, publications, events, newsletters and media releases you will be kept aware of developments as the process of merger integration unfolds.

However, we must not forget that both the InstE and IP still have a very full and active programme to run and it is very much 'business as usual' with the attendant obligations over the coming weeks and months. We must not and will not take our eye off the ball in meeting and managing these obligations as we seek to preserve continuity of services and business operations and the reputations of both organisations through this transitional period.

By their votes InstE and IP members have taken that first and most significant step and together we are now embarking on a new and exciting chapter in our proud histories. It is a journey not without risks, but given the will to succeed and the spirit of co-operation already demonstrated by both Institutes, there will be no complacency. I am confident that we have the expertise and ability to manage not only the process of merger but also the expectation to achieve the promises made. The next few steps forward are now the important ones.

John E Ingham CEng FInstE
Secretary and Chief Executive, the InstE

Membership survey

Included with the membership renewal notices sent in December 2002 was a membership survey that was commissioned to evaluate the effectiveness of the InstE's service and identify where improvements could be made. The InstE has now received over 600 completed questionnaires and we would like to thank all those members who have taken the time to provide us with their views. The

Marketing and Communications team is now working on imputing the data, which is already providing some interesting information on which to assess the InstE's strengths and weaknesses, and plans for the future.

Successful TEMOL candidates

The Institute of Energy and the University of the West of England are very pleased to report that three candidates have been awarded the Certificate of Competence in the Fundamentals of Energy Management, on successful completion of the TEMOL (Training in Energy Management through Open Learning) course.

The successful candidates are:

- ***Ms Sarah Jones***, Energy Information Manager at the London Metropolitan Police
- ***Miss Georgina Davis***, Research Engineer at Brunel University
- ***Ms Nicola Elizabeth Sloper***, Energy Manager at B&Q Plc

Congratulations again to these three women, who have demonstrated their concern for the environment and balance sheet bottom line improvements of their organisation successfully. They have indeed improved their skills on their organisation's economic and legislative requirements and the need for effective management of energy resources.

The TEMOL course is a flexible, open learning approach to an authoritative and fundamental body of study in energy management at line management level. It consists of a series of modules, which can be learned as a cohesive body of study, or as individual elements reflecting specific needs of those concerned with managing energy.

Having worked through the TEMOL course, a candidate is able to recommend a wide range of improvements with fully worked technical solutions, costing and financial analysis.

If you would like to hear more about TEMOL and where it could take you, contact the Membership and Education Office, email education@instenergy.org.uk or tel: 020 7580 7124.

CEO visits Hong Kong

In January the InstE Secretary and Chief Executive John Ingham CEng FInstE visited the Hong Kong Branch and attended the 'First International Conference on Energy Efficiency and Conservation' giving a keynote address entitled 'Parochial Issues – Global Implications'.

The two-day Conference was very successful, with the participation of over 350 delegates from national and international organisations, and was jointly organised by the Hong Kong Branch of the InstE and the Hong Kong Productivity Council.

People

Following Dr Eileen Marshall's retirement, **Boaz Moselle** has been appointed the Managing Director of Competition and Trading Arrangements at energy regulator Ofgem.

Utilyx have appointed **Nigel Cornwall**, a leading energy commentator to become Director of Research. He will head a team of five energy market researchers.

Philip Sellwood has joined the Energy Saving Trust as Chief Executive. He succeeds Dr Eoin Lees who stepped down at the end of January, after ten successful years with EST.

Faber Maunsell has appointed **David Blake** as Regional Director responsible for building services at its Birmingham Office.

Farewell to staff member

Holly Naisbitt, Membership Administration Officer will be leaving the InstE on 14 March to take up a new challenge as a nursing student at the University of Nottingham. The InstE wishes Holly well with her studies and her future nursing career.

Membership Offer

Members of the InstE can purchase Jeremy Leggett's book 'The Carbon War' for the discounted price of £7.99 (including P&P) via the InstE website: www.instenergy.org.uk/publications/overview.htm

New Members

London and Home Counties

Dr J Wade FInstE
ACE
Mr G MacKerron, FInstE
NERA
Mr M Bridges, Graduate
Ms J Iggulden, Graduate
Mr C Njoku, Graduate
Buro Happold Engineers Ltd

North Western

Mr P Blake, Graduate
Dalkia ETS
Mr R S Hellebrand FInstE
European Vinyls Corporation Ltd
Mr D N Graham, Student
Sheffield University
Mr R A Cox MInstE
Innenco Group Ltd
Mr T J Heaton, Graduate
Scientifics Ltd
Mr D Ingram, Graduate
BNFL plc

Northern Ireland

Mr H Brown MInstE
Dupont (UK) Ltd
Mr P McManus MInstE
Building Design Partnership
Mr J Hill AMInstE
Greenpark HC Trust
Mr P J Mohan, Graduate
Babtie Group

Scotland

Miss S Fromow, Graduate
Aberdeenshire Council
Mr K Macdonald, Graduate
Aberdeenshire Council
Mr M Richardson, Graduate
Mobil North Sea Ltd

Deceased Members
Mr J N Bartlam FInstE
Dr R B Shearn FInstE

Institute of Energy Midlands Branch

The 15th Annual Ellis Memorial Lecture and Lunch
8th May, Birmingham, Botanical Gardens

The Midlands Branch are pleased to announce that this year the speaker will be Professor Tony Marmont, Companion of the InstE, who will be speaking on 'Renewable energy in the new millennium – economic, environmental and social aspects'.

The lecture will be held on the 8 May, commencing with coffee at 10.15 am at the Birmingham Botanical Gardens, Westbourne Road, Edgbaston.

Tickets are on sale for £20.00 (+ VAT) and include a buffet lunch. Table sponsorship is available for £250 (+ VAT).
For ticket sales, sponsorship and exhibition opportunities please contact Ken Parker Tel: 0121 355 4433, Email: ken.parker@tesco.net, or send a cheque made payable to the Institute of Energy to:
Ken Parker, 17 Somerville Road, Sutton Coldfield, West Midlands, B73 6JD

Situations vacant / Wanted

Energy Management Software
— Product Support
East Lancashire

DHP have been developing innovative software systems since 1988, and our Optima software is now used by major energy consumers, Consultants, and Bureau s, for Procurement, Billing Validation, M&T and Financial Budgeting.
Our continued expansion means that we now require an experienced energy professional with technical and practical experience of Energy Management Software. Key roles will include the implementation of systems for new clients, product testing, and management of the helpdesk.
The successful applicant will be expected to work either independently or as part of a team, and demonstrate advanced problem solving skills, a high degree of computer literacy, and a detailed understanding of M&T and Tariff Analysis.
An attractive salary package will be offered, commensurate with age and experience.

To apply: please forward a CV with details of current remuneration to:-
Mr S.J.Wright, DHP Energy Systems Ltd, Suite 183, IMEX Business Centre, Turner Road, Nelson, Lancs. BB9 7DR. Email: steve.wright@dhp.uk.com

Imperial College London

Energy Manager

Salary: £32,794 to £38,846 pa inclusive

The College now spends £7.5M annually on energy. This senior position in the Estates management team is critical in setting policy, managing demand and devising strategies for efficient energy use and conservation.

Responsibilities include the implementation of a multi-site cooling strategy, getting the most from our CHP, developing our utilities strategy and strengthening our energy management and consumption monitoring process.

As Energy Manager you will have input to both projects and maintenance and will have the authority to ensure that best practice is achieved. You will lead Estates relations with other College Departments on all energy-related matters.

You should possess a degree or equivalent relevant qualification in Building Services, Engineering or energy-related discipline, or have experience in the field of energy management.

To request an application form and further particulars, telephone 020 7594 9044 or write to Lorraine Sumner, Estates Administrator, Imperial College London, Level 5 Libraries, London SW7 2AZ.
E-mail l.sumner@imperial.ac.uk

Closing date: Friday 28 March 2003.

Valuing diversity and committed to equality of opportunity

And Hannover.
7–12 April 2003

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Tel. 01306 744 525 · Fax 01306 744 526 · tradefairs@kuoni.co.uk

the institute of energy

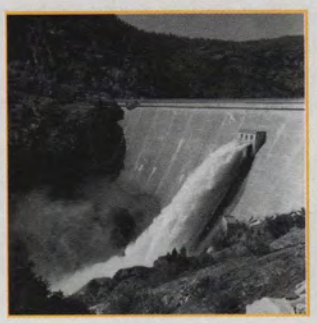
Energy Management

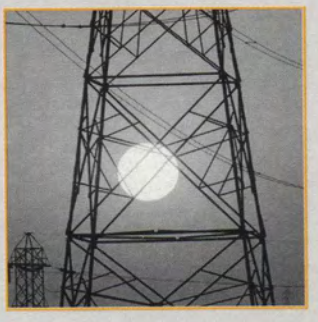
Regional One Day Courses

Would you like more control of your energy costs?
Do you need support to reach environmental targets?
Would you like guidance on managing energy?

The Institute of Energy has designed a one day introductory course to cover all aspects of energy management to assist you in meeting your energy costs effectively.

Can you afford to miss out?





The Institute of Energy will be running courses in 2003, on the following dates:

8 May, London
11 June, Glasgow
16 September, Leeds
29 October, London

Please contact the Events office on 020 7580 0008 or email: events@instenergy.org.uk to register your interest and receive further information.