

# HISTELEEC NEWS

NEWSLETTER OF THE SOUTH WESTERN ELECTRICITY HISTORICAL SOCIETY

Web Site : [www.swehs.co.uk](http://www.swehs.co.uk)

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## SUMPTUOUS SUMMER?

Let's hope that we are likely to get a more enjoyable Summer than last year with an excess of produce (if you're a keen gardener) and that we have left a dismal Winter behind. Happy holidays ahead may be?

Please note on the back page that there are a few date changes in our social programme for various reasons.

## 16<sup>th</sup> ANNUAL GENERAL MEETING

The 16<sup>th</sup> AGM of the Society was held on 20<sup>th</sup> March at the WPD Training Centre in Taunton and was attended by some 40 members and friends. Lunch had been taken before hand at the Merry Monk.

Chairman Mike Hield opened the meeting and gave his report on the activities over the last year. Sadly two events had to be cancelled at short notice, the boat trip on the Balmoral because of bad weather and the talk by Derek Lickorish because of illness. The remaining events had been well attended. The financial report showed that the Society was in a sound situation with assets amounting to £4,781.34.

The election of the Officers and Committee members took place for the coming year:-

Chairman : David Hole  
Vice-Chairman : Chris Buck  
Treasurer : Clive Goodman  
Secretary : Peter Lamb  
Committee : Roger Hughes, John Gale,  
Marcus Palmen, David Hutton,  
Keith Morgan , John Ferrier,  
David Peacock & David Cousins.

Ex-officio Memb. Secretary : Paul Hulbert

Hon. Accounts Certifier : David Legg

Mike Hield passed the "Chain of Office" over to David Hole and David thanked Mike for his work over the last year. *See report of talk given afterwards overleaf.*

## BBC PROGRAMME

We have been working behind the scenes for BBC Four. They wanted people involved with the ESI to make a programme called the "The Secret Life of the National Grid" for broadcasting in the Autumn. Many of you responded to my e-mail and a paper copy to older members, not on e-mail, and we passed your replies direct to their contact person. We don't know which material is being used yet as the programme hasn't been finalised. We will keep you informed.

## POWER BLACK-OUTS

That was the headline in February, when the energy regulator, Ofgem had the nerve to announce this in a damning report stating that there was a desperate need for investment in power generation. The regulator partly blamed the recent financial recession, but advocated proposals including placing new requirements on the six major energy companies to generate more electricity or creating a new electricity buyer who would coordinate electricity investment, which has been described as partial nationalisation! Another idea was a tax on CO2 emissions to force companies to build cleaner stations. Ed Miliband, the Energy Secretary agreed that there was a need for a more interventionist energy policy.

How often have we reported similar statements and still nothing positive happens? It appears that the Government seem unable to make a drastic step to change the situation, preferring to tinker with it only.

## NEW ELECTRIC LAMP

Some few issues ago we highlighted a new LED lamp being developed by Cambridge University, which has a greater light output than the present LED's. Now another new lamp is being developed at Bletchley Park – yes the home of Wartime code-breakers. The inventors working under the banner of a company called Ceravision have developed a lamp that uses microwaves to heat gases creating a plasma inside a bulb to generate light, which doesn't require an electrode or filament, so that there is nothing to break or discolour. It would appear to be more suitable for the industrial market than the domestic scene, due to high light output capable of replacing two high intensity discharge lamps in factories or commercial premises and presumably street lighting.

## MUSEUM INSTRUMENTS & TECH. EQUIPMENT

We are building up a major collection of old instruments and technical equipment in our museum, having been donated some more recently from WPD Taunton and the display of these is poor. Some improvement in the presentation is needed, which would involve researching information about them to provide more comprehensive labelling details. We need a volunteer who is seriously interested in instruments etc who is prepared to carry out this work assisting David Cousins. Anyone interested, please ring **David on Tel : 01275 372577.**

## NEW MUSEUM ACQUISITION – HELICOPTER

See article by David Hole explaining all about Member John Dike's involvement on page 5.

### **AGM TALK “KENNET & AVON CANAL”**

The meeting finished with an interesting talk by Michael Horseman on the “Kennet and Avon Canal”. The talk was illustrated with slides and Michael took us on a journey from Reading to Bristol. The canal was opened in 1810 and was used to transport many products along its route by working barges. The coming of the railway in 1841 took away much of the trade and so as time passed much of the waterway became un-navigable. A partnership between British Waterways, the Kennet & Avon Trust, Local Authorities and a substantial grant from the Heritage Lottery Fund has enabled the canal to be restored. Prince Charles officially opened the canal in 2003.

*David Hutton*

### **REVIEW - ANNUAL LUNCHEON AT EXETER Saturday 30th January 2010**

The day of our Winter Lunch dawned cold, bright and sunny with a scattering of snow to add to its appeal. What a pity, I thought, to spend the morning visiting what I imagined to be a dreary, musty old office, full of dreary, musty old records. How wrong I was! Devon's Record's Office is a modern, bright, "state of the art" complex that still manages to remain welcoming. About 40 members met there, were welcomed to coffee and biscuits, and were entertained, yes entertained, to a tour of about 1 ½ hours. John Draisey, (last year's Winter Lunch speaker) showed us the room where research is undertaken, the strong rooms where books and documents necessary for that research are stored, and the room where those books and documents are repaired and prepared for storage. He had even prepared a small exhibition of archives likely to be of particular interest to us. His talk throughout the tour was fascinating, informative and, quite often, humorous - a truly enjoyable visit.

Our lunch that followed at the Gipsy Hill Hotel was generally agreed to be good and generous, a standard that we have come to expect at that venue. After lunch our speaker, Robert Symons, Chief Executive of WPD, also entertained us with his talk about the future of the company. His approach was certainly "up beat" and enthusiastic, and he definitely convinced me that WPD is an excellent company with customer service as its priority. He made me feel quite proud to be a part of it, even though I am just one of its pensioners. Altogether a most enjoyable day!

*David Hole*

### **“GREENER” CARS**

What with most manufacturers producing an electric or hybrid car, including the latest General Motors Ampera and a Chinese manufacturer BYD producing a car “e6” and WPD having taken the plunge with an electric Transit for use in Plymouth, things are hotting up on the “green” car issue. The biggest gear change in development must be the launch recently in London of the Riversimple Hydrogen car designed in conjunction with BOC, who will establish hydrogen filling stations throughout London. The two-seater car can reach 50mph and has a range of 200miles before refilling and can cover 300miles on one gallon of fuel. The papers seem coy on revealing the manufacture’s name however.

### **WIND FARM LATEST**

Off-shore wind farms around the UK are the biggest engineering challenge, the first of these are now operating according to the Institution of Engineering and Technology (IET) involving 962MW representing Round 1 of the Government’s licensing system. Round 2 has been awarded and Round 3 is now available. These newer sites are in deeper water situated around 9 major sites around the UK, which require more robust engineering standards. They are therefore more hazardous and costly in construction and in maintenance. The big question is in the present financial climate, from where is the high capital investment likely to come? Is there any chance that all of the 20 odd projects are ever likely to function and satisfy the Government’s green agenda? One stumbling block seems to be the short term Government subsidy regime which expires in 2014, which is discouraging investment.

### **CONTROVERSIAL GENERATING STATION**

A firm wished to redevelop the old Carbon Black factory at Avonmouth, which was made redundant in 2008 and build a new generating station on the site. The idea is to burn Palm Oil, which is advertised as a clean fuel. However obtaining Palm Oil is not very green according to “Friends of the Earth”, who say that plantations are being planted in Malaysia and Indonesia by stripping out Jungle, creating a considerable deforestation. The firm W4B Power are also seeking to build a similar plant at Portland Dock, Dorset. Only a small stations of 49.5MW were planned for which planning approval was needed. The Avonmouth site has been turned down by the City Council following a public outcry.

### **LATEST NUCLEAR**

EDF Energy are moving closer to starting the first build of a new nuclear station in the UK. Having bought British Energy and put themselves in considerable debt. Their intentions are to build the first at Hinkley Point and the second at Sizewell and according to some papers have already awarded a contract for the four EPR reactors involved worth about £4 billion each with the firm, Areva, 90% owned by the French Government.

Areva is the biggest builder of nuclear reactors in the World with a lady in charge, Madame Anne Lauvergeon, ranked as one of the ten most powerful women on the globe. They are in the process of building two at the moment in Finland and Flamanville in France, both are behind schedule and exceeding the original costs.

EDF are not holding all the cards in the UK, with EON and RWE joining forces to build stations at Oldbury and Wylfa. These may not be awarded to Areva with Toshiba-Westinghouse angling for similar contracts. EDF Energy will have problems with finance until they sell the so-called “wires” business, that is the distribution arms of London, Eastern and South Eastern Electricity companies, which are up for sale, but they are holding on to the supply businesses. America is in a similar situation as the UK with 103 old nuclear stations providing a fifth of the country’s electricity and there is a need to replace many of them. Obama is seeking funding of \$54 billion to promote some new building activity.

## RENEWABLE ENERGY

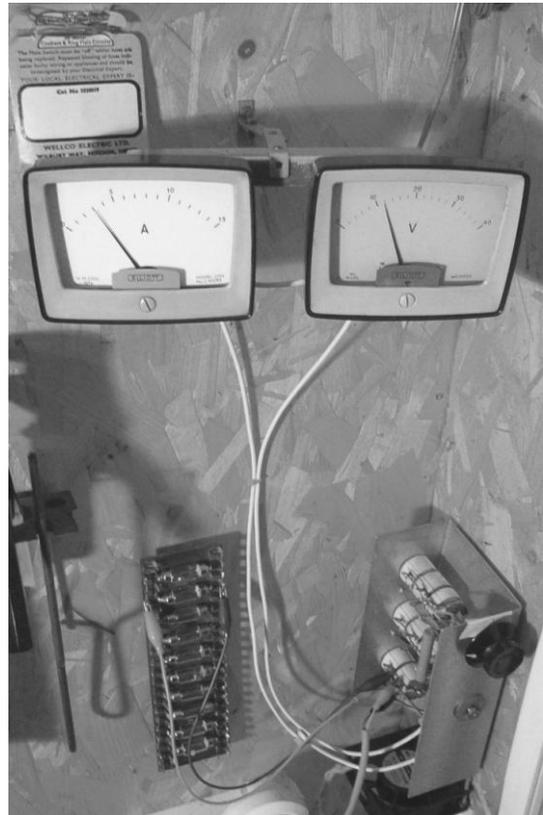
As some of you may know I have a keen interest in clean non-polluting renewable energy. I guess it all started in 1966 when with a group of fellow student and graduate engineers I visited France's River Rance tidal barrage project, flying from Bristol in a noisy old Dakota. This was a few days after the plants inauguration by President de Gaulle - and when *green* was simply a colour.

On *retiring* in 1995 I had hoped to bring back to life a small local hydropower plant, but it was not to be, and so I decided to support others, both technically and financially. I now have a small share in 37MW of renewable wind and hydro plant and on a domestic scale have built a 1.8m diameter wind turbine which helps keep my workshop/radio museum (a.k.a. a shed) cosy.



**Barrie's Wind Turbine**

Unfortunately I live at Thurloxton in a low lying sheltered spot, so not ideal, but every little helps. The upwind turbine has a nominal power output of 600W at a wind speed of 12.5m/s. The five turbine blades are made of glass filled nylon similar to those found on a Microlite and are carefully matched and balanced to minimise vibration. They direct drive (no gears) a 3phase, 12V, 16pole permanent magnet generator, with the magnets rotating around the fixed stator windings. I've offset the turbine to one side of the support mast to provide a degree of self-furling in extreme winds. The 3phase star windings are connected via a slack flexible 3core cable to a box on the mast housing three bridge rectifiers converting the output to DC. I've avoided any slip rings and find that the flexible down lead rarely needs unwinding (I must ask a neighbour from the Met Office if winds veering clockwise equal winds veering anti-clockwise over, say, a month). The scaffold pole mast is in two overlapping sections allowing the top section supporting the turbine to be lowered through the clamps for periodic safety inspection.



**Thurloxton Control & Metering Equipment**

The DC output can be used to charge a 12V battery/mains inverter or in my case I've made a thyristor controlled load bank, the thyristor increasing the load and operating a small fan when the output voltage exceeds a preset value. This allows me to harvest some watts even at very low wind speeds and it should all pay for itself by the time I'm 100.

**Barrie Philips**

## WEB SITE CHANGES

### A message from our Web Master

A major change to the way photographs are presented on the website is under way. This has been occasioned by the up to date facilities provided by our site host.

The arrangement of photographs into galleries with albums, which can be displayed by means of a full screen slideshow adds a further dimension to the site.

We can now also take advantage of a capability, which enables any interested member to upload photos that he thinks may be of interest to others onto the site.

This facility though useful when needed is however not the main reason for introducing a password protected members section. There exists many copyrighted photos that are not in the public domain, these can only be shown privately to members alone without infringing the rules. The downloading of these photos from the site is restricted. Members with email will by now have received details of a simple way to log in so that all the photos can be viewed without having to disclose personal details such as their email address.

I hope these changes will be a positive addition to the enjoyment of the website experience. **Marcus Palmen**

## METERING TRAVELS

Back in the days of the nationalised electricity supply industry (now 20 years ago!), Area Boards, such as SWEB, had responsibility for the supply of electricity to domestic as well as the majority of industrial and commercial consumers. This responsibility extended to the consumer's side of the meter terminals. Consumers dealt with a single organisation regarding all aspects of their electricity supply, including payment for electricity supplied. All nice and simple!

Then came along privatisation and under the Electricity Act 1989, a new licensing arrangement was set up for the granting of licences to (a) generate (b) transmit (which includes distribution) and (c) supply electricity, the latter two being confined to that organisation's authorised area. Thus SWEB was granted licences for these functions relevant to its original area. However, the Regulator required the distribution and supply sides of the business to operate completely independently of one another and so that part of SWEB (the major part) having responsibility for distribution, i.e. mains and services, was renamed Western Power Distribution (WPD). This now has its HQ at Avonbank, in the former stores building, and in more recent times acquired the distribution business of the former South Wales Electricity Board – hence the South Wales connection. The distribution business covers the network supplied in its area, from the National Grid Company 400 and 275 kV bulk supply points, through all the overhead and underground 132 kV, 33 kV, 11 kV and low voltage systems, ending at the service cut-out (fuse). The costs of distribution are controlled by the industry regulator (OFGEM) and are incorporated into the charges for electricity levied by the suppliers.

In the new competitive market, metering (and meter reading) became a separately recognised agent activity. The supplier became responsible for providing customers with metering (and meter reading), but there was a licence obligation on the distributors to provide a metering service of last resort (since rescinded). However, it was up to the ex-Area Boards to decide whether the Meter Operator should be part of the distribution or supply business. In the case of the South West (and subsequently South Wales), metering was retained by WPD. The remainder of the former SWEB business, covering supply, i.e. the actual selling of electricity to customers, continued to trade under the SWEB name and logo. The Electricity Safety, Quality and Continuity Regulations 2002, successor to the 1988 Electricity Regulations, was also drafted to distinguish the distribution, metering and supply of energy as three separate activities.

A further refinement to metering came when the provision of the meter asset became recognised as a separate activity ("MAP") from looking after, or installing and maintaining the metering on site ("MAM"). The majority of the suppliers initially continued to use WPD Meter Operator services, using WPD-provided metering. However, when Scottish and Southern Electricity (S&SE) decided to take metering back in house, the majority of the WPD South Wales

metering staff were transferred to S&SE and WPD gave notice to the other suppliers that it was terminating metering activity in South Wales. (The other suppliers either elected to use their own metering services, S&SE metering services, or one of the other Meter Operators).

Soon after privatisation the SWEB supply business was acquired by London Electricity, itself subsequently bought out by Electricity de France (EDF), who established a new office in Exeter to look after their interests in the South West. Although the supply business has the licence obligation to provide the metering function, metering work continued to be undertaken on a contract basis by WPD. However, further changes have taken place in recent times. First the SWEB logo was dropped, with the supply business now being operated under the EDF Energy banner. Second, the metering work has recently been taken back in-house with staff transferred from WPD also now working directly under the EDF Energy banner. Unlike South Wales, in the South West EDF Energy have continued to install metering equipment provided by WPD.

The split away of metering work from the distribution activity has also brought about changes to working arrangements. Field metering staff now work direct from home. Arrangements regarding the stocking and supply of new meters have radically changed since nationalisation days, when meters were supplied from the Lockleaze (Bristol), Newton Abbot and Cardiff meter test stations, with buffer stocks held at District depots for use by local metering staff. Nowadays, meter certification is undertaken by the manufacturers. In the case of whole current meters (as used for domestic and the smaller commercial/industrial properties), WPD provide stocks to a nominated electrical wholesaler for distribution throughout the South West for direct supply, with other materials, to meter staff as required.

So what if you decide to change to a new supplier for your electricity? This doesn't mean that your meter will need to be changed because WPD has parallel working arrangements in place with the other electricity suppliers so you will simply pay the new supplier for the energy used. That supplier appoints a meter operator to look after the metering and WPD charge that supplier for the use of the network and rental of the metering. All of the data to manage this is sent automatically through a dedicated network to every party's computers, within a set of rules and timescales managed by the industry, but that's another story!

*Chris Buck and Ian Dobson (EDF Energy)*

## A DISCARDING SOCIETY

Have you ever thought how much electrical appliances/equipment we are dumping at the present time? This is highlighted by the recent issue of the new Apple Tablet, a touch-screen computer designed to do away with many electronic devices and of course so does the digital TV switch-over. How many of you have dumped perfectly good working analogue TV sets recently in favour of digital flat screens? What a scandalous waste!!

*Continued overleaf.*

### ***A Discarding Society continued***

Richard Morrison of the Times wrote recently that a satirically minded sculptor constructed a gigantic statue of electrical goods discarded by the average British person in a lifetime. It weighed 3 tonnes and included 5 fridges, 8 toasters, 6 microwaves, 7 PC's, 6 TV Sets, 12 kettles, 7 vacuum cleaners and 35 mobile phones – probably a bit conservative!!

Technological changes are taking place so fast. It only seems yesterday that we were buying our first video tapes and even converting films into videos and now they are redundant, replaced by DVD's. At my local recycling centre, when I asked where to place old video tapes, the landfill bin was indicated with the comment that 1000 are being dumped there every week. So our local authorities are having difficulty in keeping pace with changes in dumped rubbish.

*Peter Lamb*



**INDIAN WIRESCAPE - John Dike took the above amazing photo on holiday in India last year**

### **MODEL HELICOPTER**

Visitors to our Cairns Road Museum might wonder if it is the appropriate place to display the "toy" helicopter which it has now acquired. To begin with, the helicopter is no toy. It was a working, radio controlled machine, which was modified to serve a valuable purpose for SWEB and SWEB's customers.

For the technically minded, it is powered by a 10 c.c. 1 ½ BHP engine with a tuned exhaust to give added power and lessen noise. It was controlled by a 5 channel radio control system which used 2 channels to adjust the rotor, 1 channel for the throttle, 1 channel for the tail rotor and 1 channel for a hook release mechanism. To understand its purpose we need to go back several years and travel to a steep, wooded valley near Slapton Sands on Devon's South Coast. Following a bad storm in which conductors

from the overhead line had been brought down across the valley by heavy icing, the overhead line gang were faced with the problem of getting the new conductors across the valley. There were various practical reasons why it was not possible to attach the new conductor to the old and pull it across and so a novel solution was used. A full size helicopter was hired and was used to take a light rope across, to which a heavier rope was attached and, eventually, the conductor. Problem solved! Clearly this was an ideal solution, expensive but the machine could not always be available exactly when needed.

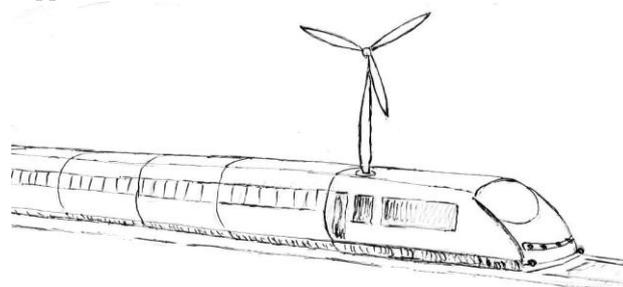
Now it just so happened that the Transport Foreman at Torquay Local Office, Geoff Bell, flew model helicopters as a hobby and he came up with a brilliant idea. Why not modify a model helicopter so that it could carry a lightweight rope across valleys just as a full size machine had done; a much cheaper option that could always be on standby for such emergencies. That's why the miniature helicopter deserves a place in our Museum, but it still doesn't explain how it got there. At the end of its flying days when its air worthiness certificate expired and it became redundant, John Dike took over its care, with SWEB's "blessing", and he let the "Lions Club" display it for charity. Since they have finished with it, John has passed it to the Society for display in our Museum.

That isn't quite the end of the story. Geoff Bell continued to fly model helicopters and one day he was spotted by a man from the BBC called John Downer, who wanted to know if Geoff's machine could carry a movie camera. When Geoff proved that it could, he left SWEB and was employed by the BBC in the making of several Natural History documentaries involving difficult aerial shots. He went on to develop other novel remotely controlled cameras such as the "trunk cam" - a camera attached to an elephant's trunk, the "boulder cam" - a camera hidden in an artificial boulder, and a "dung cam" - a camera hidden in - well it's self explanatory! The next time you see one of these documentaries look out for Geoff Bell's name in the credits and think about the model helicopter in our Museum.

*David Hole*

### **ELECTRICITY CONUNDRUM**

A friend of mine, who is a keen train buff, was grouching about Wind Farms, since he is very anti! He then said "The Government announce that they are going to electrify the railways, but where are they going to get the electricity from? Put ruddy wind turbines on the trains, I suppose!!



### **NEXT EDITION**

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