

A healthy future? The CBI comments



Hotline 96's feature "A healthy future for contract heat treatment?" recorded the thoughts of a number of CHTA members on the state of our industry. Digby Jones, CBI's Director General, comments after being sent a copy by*

Chris Clayton, Chairman of CHTA-member Beta Heat Treatment's parent group Clayton Holdings ...

I found the newsletter very interesting – it highlights a range of business concerns, which are frequently raised by CBI members. The CBI is working on a number of these issues:

Climate Change Levy (CCL)

The CBI has been critical of the CCL, highlighting the distortions in the energy tax and the scale of impact on certain business sectors (particularly those energy-intensive sectors not eligible for climate change agreements (CCAs)). With the upcoming review of the UK climate change programme, we continue to push for Government to review both the effectiveness of the CCL as an environmental tool and the overlaps between the CCL and the EU emissions trading scheme.

In particular, we are calling on Government to ensure that businesses as energy users are not paying over the odds for emissions

*Comments received in October.

reductions – through the CCL and then through higher electricity prices (resulting from the cost to generators in securing emissions reductions).

Extension to eligibility criteria for CCL

The CBI pushed hard for a review of the eligibility criteria for the CCL discount. The climate change agreements have been a successful instrument for reducing emissions and CBI believes that all sectors prepared to take on emission reduction commitments should be eligible for a CCA. We welcomed, as a step in the right direction, Government's announcement in the 2004 Budget to extend eligibility to the CCL discount, although the definitions of energy-intensity and international competitiveness exclude a number of important sectors from the scope of the new eligibility criteria.

Competitiveness impact of energy prices

We continue to receive reports of energy price rises of between 30 and 50% over the last year (and up to 70% over the past 18 months).

With prices still on the rise, we are working to raise the profile of this issue at Ministerial level, with a view to generating a fuller understanding of the causes and impacts of rises in gas and electricity prices.

Government has, in the past, introduced environmental legislation/policy (eg the CCL) on the back of low energy prices. As energy prices have risen (and the relative competitive advantage been lost), Government must, in setting and reviewing its environmental objectives, consider what UK business is able to bear.

New CHTA contact details

As indicated in the previous edition of *Hotline*, CHTA's registered office address is changing. From January 1st 2005, the new contact details will be as follows:

The Contract Heat Treatment Association

c/o SEA
BJGF Federation
Federation House
10 Vyse Street
Birmingham
B18 6LT

Tel: **0121 329 2970** (or 0121 237 1123)

Fax: 0121 237 1124

E-mail: mail@chta.co.uk

Website: www.chta.co.uk

CHTA Secretary: Alan J. Hick

Registered in Wales (No. 1376679), The Contract Heat Treatment Association is a company limited by guarantee. It is affiliated to the Surface Engineering Association.

Please note that, until December 24th, the telephone number for contacting CHTA at its present address has changed to:
0121 204 3690

Inside . . .

	Page
• UK energy prices: the future?	2
• North American gas prices: US heat treater testifies to Congress	3
• CCL report	3
• Member profile	4
• 2005 CHTA Officers	4
• Member news	5
• Thanks to Wolfson	6
• Market Movements	6



Guido Plicht
Senior Research Engineer



Ask the expert

Q. I have measured the oxygen in my continuous furnace, and it's low, but my parts still come out oxidised. Why?

A. That is a question that comes up frequently. When troubleshooting for oxidation in a continuous furnace atmosphere, it's important to measure both oxygen level and dew point. To find out more, visit our website.

tell me more

www.airproducts.co.uk/ate1

UK energy prices: the future?

Recent dramatic escalations have led to panic calls from energy brokers, with advice to buy into long-term deals before prices go even higher.

Gary Coffey (Tamworth Heat Treatment) asks should we heed their recommendations, and jump before the price reaches an inaccessible level, or wait and see what the future brings?



When gas was first established for commercial use, long-term deals were struck and the market remained stable. British Gas controlled the supply and, as a result, gas was not freely available to trade in the open market. With deregulation of the gas industry, the market for gas contracts emerged. The price of gas adjusted

INQUIRY INTO ENERGY PRICES

Parliament's Trade and Industry Committee announced in October that it has decided to conduct an inquiry into the effects of the recent increases in gas and electricity price on both domestic and industrial/commercial customers.

The electricity and gas regulator, Ofgem, recently published its report on the causes of the significant price spikes that took place in October and November 2003, together with the price increases in August/September this year and the increases in forward prices for gas for winter 2004/05. The Financial Services Authority has also announced that it has found no evidence of manipulation of the markets where wholesale gas is traded. Taking Ofgem's analysis as a starting point, the Committee is focusing on the effects of the price increases on all types of energy customers. The inquiry encompasses such questions as whether the rises have been a temporary response to short-term supply problems or are the start of a long-term increase in UK energy prices, and what Ofgem's and the DTI's responses to the problem should be.

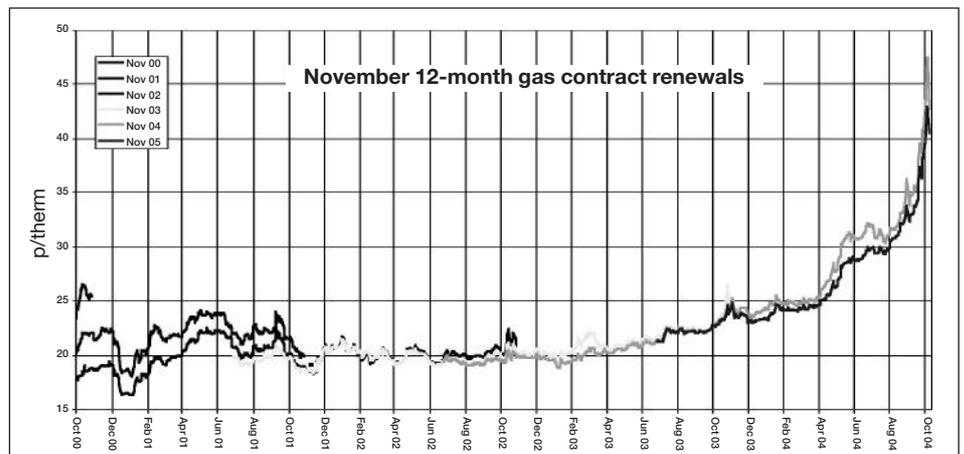
For further information, contact the Committee Office on 020 7219 5777/5779 (e-mail: tradeindcom@parliament.uk).

to "supply and demand" created by fluctuations due to the winter and summer weather patterns.

In 1998, the Interconnector pipeline, running from Belgium into Norfolk, was commissioned, opening up the large continental gas markets, still linked directly to the index price of oil, to UK markets. The pipeline also enabled the selling of UK-produced gas to mainland Europe, even when there are shortages here. This pushes up the cost as the shortfall has to be met on the open market at a rising price.

Japan, the second biggest oil consumer after the USA.

Gas and oil prices have a direct influence on the cost of electricity because of the way in which we generate power in the UK. Some 40% of our electricity derives from gas-burning power stations and a high percentage of the remainder is from oil- and coal-burning stations. Our European neighbours have a sizeable nuclear power programme and also utilise hydroelectric power generation techniques. The figure of gas dependency for power generation is only 3.2% in France and 10% in Germany.



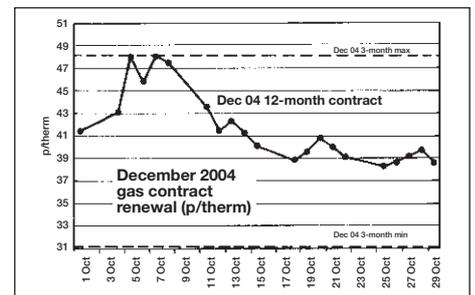
Escalating UK 12-month gas contract renewal price.

As a result of the UK's declining production from North Sea reserves and our growing consumption, we will become a net importer of gas sometime in 2005. Forecasters are warning that 75% of our gas requirements will need to be imported by the year 2015. This leaves us at the mercy of the trading floor, global market forces and the ability of the trader to keep a cool head.

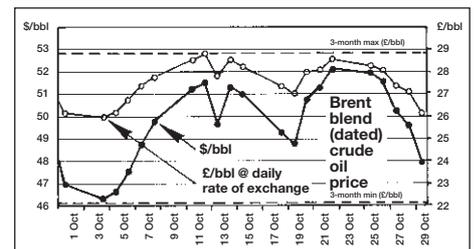
As gas is now freely available to trade, the price can fluctuate on a day-to-day basis. Over recent months we have seen the price per therm rise by over 80% (see gas contract renewal graph above). These increases are due to the strong link between oil and gas prices and, with no sign of cheaper oil in the foreseeable future, gas price levels will remain high.

Oil prices are still being driven higher by uncertainty in the Middle East, thrown further into chaos with the recent death of Yasser Arafat. The increased worldwide demand for oil and the slowing of supply have also contributed to raising the price. Demand from developing countries is growing year on year and the requirement from China alone is increasing by 66%, from 350,000 to 580,000 barrels a day, this year (2004). This makes China, overtaking

Our nuclear power generation is in decline and there is no real alternative source. The government has set a target of 10% of power to come from renewable sources but this will have a very limited effect on the market. No real electricity-generating alternatives seem to exist in the UK and forecasters predict we could be



Fluctuating gas therm prices, December futures.



Fluctuating daily crude oil prices.

dependent on gas for 75% of our power generation.

Prices in mainland Europe seem to be cheaper than in the UK where we are currently looking at 40-45p/therm for gas and £35-36/MWh for electricity. The gas price in France and Belgium is around 34p/therm and, in Germany and the Nordic region, electricity is running at 35 and 31 euro per MWh respectively (some £25 and £22 per MWh at current exchange rates). These prices reflect each country's ability to supply energy from their own national reserves and to source it from nuclear and hydro generators.

As a result of escalating electricity charges, products that require high energy input in manufacture (such as special controlled-atmosphere gases from the industrial gas companies) have already started to rise in price. Some companies are including energy-related clauses within their contracts to protect themselves from any further price rises by passing on the cost to the user.

Just when you think things can't get worse, the power generators are warning of the possibility of a 1-in-20 winter having an effect on energy supplies. Averages predict that the UK will have a really bad winter every 20 years. The last one was in 1979, making us five years overdue.

The increase in consumption over the winter pushes power suppliers to within their generating limits. Some experts are predicting that the grid may not be able to cope with a cold winter, with supplies reduced due to high prices. Some communications are already circulating asking companies to reduce power at peak times in order to limit overloading of the grid and prevent a resultant power cut.

With the global economy requiring more and more of the world's energy and supply falling due to reducing oil supplies, the only direction for energy prices seems to be up. The North Sea oil and gas fields are now finding it hard to provide our national need and the country will be required to import energy at an ever-increasing rate.

The market for energy is as volatile as any commodity market and traders can be pushed into buying at inflated prices. In previous years, Enron, the failed American energy giant, bought so much of the available energy that it could have some control of the energy market. It seems that this control has disappeared with the demise of that company and so helped to create the panic market.

Markets may fall slightly in the coming months but, with gas and electricity prices in the UK so dependent on the global oil price, the roller-coaster of price fluctuations will be something we may well have to get used to.

North American gas prices: US heat treater testifies to Congress

UK heat treaters are not alone in their concern about escalating energy costs.

M. Lance Miller, Executive Vice President of the Metal Treating Institute, tells *Hotline* that US gas prices are "going out of sight". In mid-November he noted: "While prices change every 15 minutes, I'd say the range is from US\$5 to 6.5 per million BTU (some 27-35p/therm at the current exchange rate). What's scary is they are predicting this price to go up to as much as US\$10 (54p/therm), if we have an unusually cold winter."

Lance reports that one US heat treater recently testified to Congress in Washington DC on the impact of high energy prices...

On 6th October 2004, a National Association of Manufacturers member and small business owner based in Elkhorn, Wisconsin, warned the Senate Subcommittee on Competition, Foreign Commerce and Infrastructure that high energy prices – particularly prices for natural gas – are threatening his business and thousands like it and that Congress must enact comprehensive energy legislation to ameliorate this gathering crisis.

Gary Huss, President of Hudapack Metal Treating Inc., employs 160 people at facilities in Wisconsin and Illinois. He told subcommittee members that small businesses like his, that rely on natural gas both for electric power and as a critical element of their production processes, are being hit hard.

"We provide relatively high-paying jobs along with good health, life, short-term disability and retirement plans. But, maintaining these jobs and benefit levels has been very difficult since natural gas prices began skyrocketing in 2000," Huss explained.

"Historically, severe energy cost increases have driven our economy into recession by reducing orders for capital equipment and lowering consumer confidence" Huss continued. "My company has been faced with major cost increases that threaten our survival".

Huss reported that, in a recent NAM survey of its board members, 93% of small manufacturers said they are feeling a "negative impact" from high energy costs on their "profit margins and cash flow, market share, and demand for their products."

"We are limited in our ability to pass energy-cost increases on to our customers," added Huss. "Our customers

can simply turn to foreign producers who do not suffer the same high structural cost burdens that we do.



"Congress needs to pass comprehensive energy legislation that will increase the supply of affordable energy, improve our natural gas and electricity infrastructure, and provide incentives for additional energy efficiency investments," Huss (above) insisted. "Please make this your first order of business in next Congress so I can continue providing high-value metal products to my customers around the world and a high standard of living for my employees here at home," he concluded.

CCL report

Another update from SEA's CEO **Dave Elliott** on the Surface Engineering Association's continuing campaign to render CHTA members eligible for CCL rebates via negotiated climate change agreements...

Despite repeated requests for data to be provided, one of the largest groups within the CHTA membership has still not furnished the required information. This is seriously hampering the efforts of the SEA to present the sector's data to DEFRA and HM Customs & Excise.

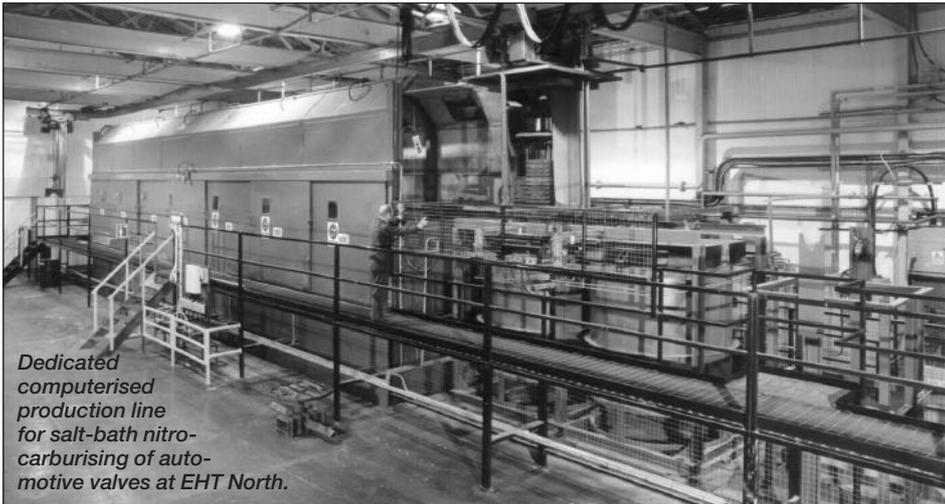
I would urge those members who have not supplied data to do so immediately. This is because the current data show that the sector's energy intensity is very close to the automatic qualifying level of 12%. If the energy intensity of the sector is above 12%, all companies will automatically become eligible to join a climate change agreement.

At the recent House of Lords SEA briefing lunch, Andrew Stunell MP, the Lib-Dem Chief Whip, presented copies of replies to various letters he had sent on behalf of CHTA. John Healy MP responded on behalf of HM Treasury stating that "The Government does remain open to suggestions for a domestic competition test, which would need to meet the four tests of administrative simplicity, legal robustness, clarity of rationale and consistency with state-aid rules". So there is still hope, even if we cannot reach the elusive 12% energy intensity level.

EHT – experts by name and experience

Long-time CHTA members Expert Heat Treatments (EHT) have four operating sites in the UK, at Stillington (Stockton-on-Tees), Morden (Surrey), Gosport (Hampshire) and Sittingbourne (Kent). The three southern-region divisions are co-ordinated through the larger Morden site as “EHT South”, with Stillington operating as “EHT North”. All four sites operate as an independent company reporting to the parent group, Darchem Engineering. Records held at Morden show that, as “The Expert Tool And Gauge Heat Treatment Company”, EHT was established in Surrey during the 1914-18 war. It is still going strong, 90 years on, with dominant market positions in the north-east and south-east of England. Every division is BSI/ISO approved, with the two major sites at Morden and Stillington strengthening their numerous

gained Nadcap accreditation for one of the widest ranges of heat treatment processes in the UK. It supports this with its UKAS- and CAA-accredited on-site metallurgical laboratory for test-piece production, mechanical testing and analysis. Heat treatment facilities/processes at Morden include conventional air-circulation furnaces (including quench), nitriding, induction, and vacuum, salt-bath and sealed-quench furnaces. Apart from sealed-quench units, these facilities are also available at Gosport (formerly Southern Heat Treatments) and Sittingbourne (formerly Kent Heat Treatment). With transport and management for the three sites co-ordinated through Morden, EHT South is able to provide a full range of subcontract heat treatment services throughout the southern counties.



Dedicated computerised production line for salt-bath nitro-carburising of automotive valves at EHT North.

aerospace customer approvals by securing Nadcap accreditation during 2004.

Each site operates a full range of heat treatment processes to satisfy their regional customers' needs, with the two main sites also serving a much wider customer base throughout the United Kingdom.

EHT North's range of facilities includes extensive conventional air-circulation furnaces (with associated oil/water quench) for loads of 14tonne maximum and temperatures up to 1250°C, vacuum furnaces, conventional salt baths (including *Tuffride*) and the UK's largest automatic programmable *Tuffride* (and *Sursulf*) line, which is dedicated to processing some 20million automotive valves per annum.

In the South, Morden is focused on both commercial and aerospace sectors, with some 65% of sales in the latter. In order to achieve and maintain this position, it has

Collectively, the four current sites have established customers throughout the UK for all “industry-standard” processes, such as surface hardening, through hardening, and stress relieving for the commercial and aerospace sectors. However, their expertise also extends to several more specialist processes such as vacuum brazing, boriding, *Sursulf* and *Tuffride* Q and QPQ variants.

Having developed from humble beginnings 90 years ago, EHT have grown into one of the UK's leading multi-site heat treatment companies. With such experience and know-how gained over many years, EHT feels fully justified when its customers turn (or return) to “Experts” for their subcontract heat treatment needs.

Further detailed information on EHT's capacity and capability can be found in CHTA's website Buyer's Guide (www.chta.co.uk) or at www.eht.co.uk (telephone 020 8337 7744 for EHT South or 01740 630353 for EHT North).

2005 CHTA Officers

MANAGEMENT COMMITTEE

CHTA-member representatives for 2005 are:

- **Roger Bird** (TTI Group)
- **Simon Blantern** (Bodycote Heat Treatments)
- **Richard Burslem** (Wallwork Heat Treatment)
- **Mark Florance** (Techniques Surfaces UK)
- **Paul Handley** (Heat Treatment 2000)
- **Roger Haw** (Flame Hardeners)
- **Terry Littlewood** (Expert Heat Treatments)
- **Dave Walker** (Beta Heat Treatment)
- **Alan Whitehouse** (Tamworth Heat Treatment)

PUBLICITY SUBCOMMITTEE

This committee currently comprises the following representatives of CHTA member companies:

- **Gary Coffey** (Tamworth Heat Treatment)
- **Alistair Cowie** (Midland Heat Treatments)
- **Peter Cox** (Beta Heat Treatment)
- **John Craddock** (HHT)
- **Keith Hayward** (Controlled Heat Treatments)
- **John Jervis** (Bodycote Heat Treatments)
- **Ian Lacey** (Alloy Heat Treatment)

The Publicity Subcommittee, which meets four times a year, is always keen to increase its number in order to inject a fresh flow of ideas and to ensure that it represents a consensus of CHTA member views. Other members willing to offer a representative should contact CHTA's Secretariat.

Spread the word by proclaiming your CHTA membership



For use on company letterheads, literature, websites and advertisements, members can download CHTA's logo from the Members Area of the Association's website.

NEW MARKET SPURS MAJOR INVESTMENT IN ADI

ADI Treatments Ltd is expanding production by more than 50% with a £1million investment in new furnaces to process austempered ductile iron parts for renewable energy systems. The project is being supported by Advantage West Midlands via a Selective Finance for Investment regional grant of £95,000.

Major orders have already been placed for the design and manufacture of a large controlled-atmosphere batch furnace and integral salt quench. ADI Treatments selected USA technology leaders AFC Holcroft, partners in previous projects, as supplier.

The new unit will accommodate parts up to 1.8m in diameter and extend the range of applications possible with the current plant. Engineers from both organisations are liaising to customise the configuration of the furnace and to further develop the austempering process for heavy-duty components. Local contractors will assist with large-scale installation work while ADI Treatments will carry out commissioning and process trials with support from AFC Holcroft.

ADI Treatments Ltd is part of an international network of austempering specialists who support castings producers and users. The company was established at West Bromwich in 1997 to provide a European centre of excellence for design and supply of ADI component solutions. Many of the applications to date have been in the automotive, earth-moving and machinery industries.

Managing Director Simon Day said: "We have been negotiating new business to heat treat large-diameter gearbox parts for wind turbine systems. To accommodate the load sizes and quantities, we needed a special solution. The regional grant tipped the balance in our decision to buy what will be the world's biggest commercial sealed-quench austempering unit. While the renewable energy market has the potential to fully utilise our new furnace, the outlook from established customers is also encouraging. Many new developments are scheduled for completion next year, including transmission parts for cars and heavy trucks. We believe our recent



ADI Treatments Ltd Managing Director Simon Day (left) and David Blake of Advantage West Midlands announce the £1million furnace investment at the ADI West Bromwich facility.

ISO 9001:2000 qualification will further boost our appeal with these industries".

The new application is seen as part of an engineering trend favouring the uptake of austempered ductile iron. Used in place of steel and aluminium, ADI can bring significant savings in weight (10%) and cost (50%).

Following delivery in early 2005, visitors will be invited to an Open Day to view the new plant and its capabilities.

BODYCOTE ANNOUNCES NEW LOW-PRESSURE CARBURISING SERVICES

Bodycote's Vacuum Heat Treatment Centre, at Woodford in Cheshire, has expanded to include the low-pressure carburising (LCP) of automotive and other precision components.

Having successfully validated a new Seco/Warwick VTP-4035/36N furnace in only six weeks, the Woodford team is working with several customers to apply performance-improving LCP treatments to new and existing products.

With gas quenching at up to 10bar absolute, this versatile furnace is designed for LPC of low-alloy engineering steels.

This is the third LCP unit commissioned by Bodycote this year. Other strategic LCP locations within the group are Livonia (Michigan, USA), La Talaudiere (France) and Kapfenberg (Austria), with furnaces supplied by Ipsen Abar, ECM and BMI, as well as Seco/Warwick.

NEW HIGH-PERFORMANCE AUTOMOTIVE HARD COATING OFFERS POTENTIAL 'RUN-DRY' BENEFITS

Nitron MC, a new super-hard carbon (SHC) coating from Tecvac Ltd, a member of the Wallwork Group, offers high hardness and extreme lubricity to give power-train components extended life, reduced friction and increased available power transmission.

This new PVD coating is highly resistant to thermal and mechanical shock, with a

hardness of over 1000HV, better than good chrome plate, and an ultra-low friction coefficient of 0.1. *Nitron MC* has been designed to meet the highest performance requirements of the autosport business up to and including F1. Its high operating temperature stability, up to 300°C, allows bearings, gears and sliding components to run really hot, while retaining performance at high temperatures and loads, allowing gear trains, for instance, to 'run dry' without immediate loss of performance.

Nitron MC is applied by PVD in a near-vacuum very low-pressure environment, which allows a combination of 'crystalline phase' and 'amorphous phase' carbon to be applied, as a very thin high-adhesion layer, to most metallic alloys, including titanium alloys and steel. The crystalline phase provides high hardness while the amorphous phase furnishes extreme lubricity. The coating is doped with other elements to achieve the desired properties.

The new Tecvac coating has also achieved another breakthrough: low application temperatures, around 180°C. This means hardened-and-tempered or even case-hardened steel components, especially gears, can be coated without affecting the critical structural performance gains already achieved by heat treatment.

"*Nitron C* offers a new dimension for us," says Mike Allen, who leads Wallwork Heat Treatment's autosport team at Birmingham. "This new coating is ideal for highly-stressed titanium and steel components. We already apply sophisticated high-performance hardening, case-hardening and vacuum carburising to racecar gear sets and bearings (and other power-train components), but can now add a bonus of 'super-low' friction and potential 'run-dry performance' in addition to the well-established benefits provided by the heat treatment."

One crucial additional advantage of *Nitron MC* is its high temperature resistance. Its stability at operating temperatures of up to 300°C gives it significant advantages in other power-train areas such as tappets, camshafts, pumps and turbos.

Tecvac's sales manager Simeon Collins commented, "Our first carbon-based coating, *Diamolith* (a diamond-like carbon), introduced with French diamond-like-carbon specialist ICC earlier in the year, has exceeded our expectations. We expect *Nitron MC* to make an equal impact in the lubricious hard coatings sector. Both coatings offer radical performance gains in their application areas and, with 24/7 operations and a nationwide dedicated collection and delivery service, we can provide both coatings in very tight timescales."

SPONSORSHIP CONTINUES

CHTA is delighted to announce that Air Products plc have agreed to extend their kind sponsorship of *Hotline* and the Association's website to cover the 2005 calendar year. On behalf of all members, we thank them for their much-valued continuing support.

WOLFSON HEAT TREATMENT CENTRE

**Thank you
Wolfson at Aston,
good luck at SEA**

The changes in CHTA's contact details, noted on page 1, arise because of the unfortunate closure of Wolfson Heat Treatment Centre at Aston University. We take this opportunity to thank the Centre for its long-time support for CHTA and to report on plans for its information services to continue elsewhere.

We were all saddened to learn that Wolfson Heat Treatment Centre is being closed by Aston University on December 31st. Not only has the Centre earned a worldwide reputation as the focal point for information, advice and education on our vital technology for British engineering industry as a whole, it has also made a valuable contribution to the standing of the subcontract heat treatment sector. Through its Manager, Alan J Hick, the Centre has provided CHTA's Secretariat ever since the Association was established in 1973. As Professor Tom Bell generously observes in his editorial in the current issue of *Surface Engineering*, over the past 31 years Alan "has played a vital role in energising and co-ordinating both the economic attitudes and technical aspects of the Association to its current high professional standards". Whilst Alan will continue as CHTA Secretary and *Hotline* Editor, he is otherwise taking advantage of the opportunity for early retirement presented by Aston University's decision. This means the regrettable end of the *Heat Treatment of Metals* journal that he edited proudly, since its introduction in 1974, and laid to rest fondly with the final 2004.4 edition.

Please send your news items for Hotline 99 by e-mail to: mail@cta.co.uk

**Deadline:
28th February**

Market Movements

ANALYSIS OF QUESTIONNAIRE REPLIES RELATING TO 36 CHTA MEMBER SITES

"THIS QUARTER" =

**1 JULY –
30 SEPTEMBER
2004**

= **TURNOVER INDEX 100**

National

OVERALL ANALYSIS
(36 SITES)

	Mean index
This quarter last year	102.7
Last quarter	100.8
Predicted next quarter	103.5

