The Contract Heat Treatment Association Newsletter

HOTLINE

Issue No. 172
June 2023

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CHTA Secretariat

Items for inclusion in *Hotline* and enquiries about CHTA activities should be addressed to:

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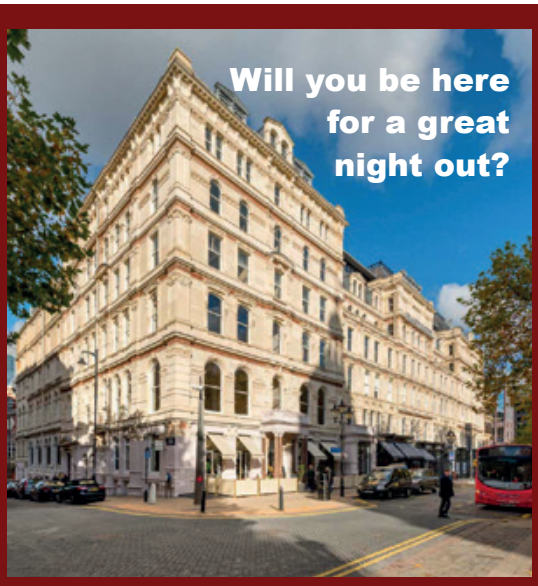
CHTA is affiliated to the Surface Engineering Association



SURFACE ENGINEERING ASSOCIATION
Awards
&
CONTRACT HEAT TREATMENT ASSOCIATION
50TH ANNIVERSARY
Gala Dinner

Hosted by SEA

Sponsored by CONTROL ENERGY COSTS

Please come and join your fellow heat treaters to celebrate

CHTA's 50th Anniversary

Friday 20th October 2023 at Birmingham's Grand Hotel

CHTA 1973-2023 50TH ANNIVERSARY

Mark the date in your diary and plan to bring along company colleagues.

Why not also apply for one of the prestigious awards to show what a fine industry CHTA represents? (Dealine for submissions: 3rd July 2023, 4.00pm).

Full details at:

ww.sea.org.uk/2023-awards/

Net zero: the musings of a heat treatment doyen

Richard Burslem offers a personal view

Q. Should a line-caught fish be labelled as net zero?

Let us ponder this question and return to it later.

A flawed concept?

We seem to live in a world of complex issues that are reduced to two- or three-word titles that entice us to believe we understand the underlying complexity. "Carbon Emissions" for example would, some years ago, have been thought to refer to soot but now is commonly used to mean emissions of carbon dioxide (CO_2) from burning of carbon-based fuels. This is important because CO_2 is a major constituent of "Greenhouse Gases" (GHG) that trap the sun's heat and lead to "Climate Change" or, as it used to be called, "Global Warming".

This is a catastrophic global problem and we have had 27 "COP" meetings to try to make some progress to address it. COP, incidentally, refers to the Conference of the Parties to the United Nations Framework Convention on Climate Change: no wonder it's shortened to COP.

I thought I would start by finding a precise definition of net zero, to make sure that my understanding of the concept is accurate, and so turned to the UK Government's Office of National Statistics (ONS) as being a reliable source. Their 2019 publication, "Net Zero and the different official measures of the UK's greenhouse gases emissions", immediately rings alarm bells; why should there be different official measures?

They state that "Net zero means that the UK's total greenhouse gas (GHG) emissions would be equal to or less than the emissions the UK removed from the environment". But surely, if there are different official ways of measuring GHG emissions, how will we know if that has been achieved? The phrase "you can't control what you can't measure" springs to mind. Incidentally, excluded from UK GHG emissions measurement is fuel used for international air travel and sea transport, as well as any GHG produced during the manufacture of imported goods or provision of services. Logically, if we stopped all manufacturing in this country and imported all our goods, this would be a giant step to achieving UK net zero by this measure. We could all fly off abroad on holiday on our unaccounted zero-emissions flights!

The whole concept of net zero seems to me to be flawed and I think we have the answer to the opening question: Should a line-caught fish be labelled as net zero? - Only if it's a red herring.

We have a UK Emissions Trading Scheme whereby government-issued carbon credits can be traded by certain large energy users. If you produce less emissions than you are allocated then you can sell the remainder on the market to businesses that are exceeding their allowance. This seems as sensible as a 40-a-day cigarette smoker claiming they only smoke 20 a day because their friend who smoked 20 a day has given up!

The use of a private jet can be environmentally justified by purchasing an offset, so achieving net zero for the flight; I believe this is called "Greenwashing". The irony is that the aviation fuel used is not measured anyway for UK net zero.

We are not here to greenwash. However, let us not be shy about proclaiming the environmental benefit of heat treatment in enabling the manufacture of sophisticated parts with minimal weight and extended life.

What can heat treaters do?

Enough of this! Let us forget net zero and concentrate on the practicalities of what we heat treaters can sensibly do to reduce our GHG emissions, which surely has to be a good thing. It's a massive topic and needs a systematic approach to identify where our GHG emissions are created and what can be changed to lessen them.

The most obvious place to start is clean energy. Surely if GHG emissions are to be reduced then the use of natural gas for heating and electricity generation in the UK will eventually be stopped. This impacts on decisions about investment in the type of new equipment we purchase. It might not stop you from investing in replacement efficient gas burners, but it would be helpful to know for how long natural gas might be available.

Will hydrogen be used as a replacement fuel? Nobody really knows but, currently, over 90% of hydrogen is produced from the partial oxidation of fossil fuels and there are plans to capture the CO_2 by-product and store it to make the hydrogen net zero. Does that sound sensible? Hydrogen could be made by hydrolysis using electricity generated from solar power producing no CO_2 in the process but to do that at scale would require investment and a political will globally. Longer term, the use of natural gas as feedstock for carburising or protective-atmosphere generation may be problematic if it is not available as 'mains' gas.

Almost 40% of the electricity used in the UK comes from renewable sources, although you may question the import and burning of American wood chips as fitting the definition of renewable. A switch from gas as a fuel to electricity buys into this benefit; burning gas is certainly not renewable. Investing in solar panels on your factory roof might be one way of producing and using your own clean energy but is expensive and problematic because of planning regulations, building orientation and possible lease conflicts.

The next place to look is at the efficiency of the whole business and a useful and simple tool is the concept of Waste Hierarchy:

At the top of the triangle there is no GHG emission and it gets worse the further down you get. An example might be a single-use plastic water bottle: Buy one, drink the water and toss on the bottle on the floor has a high GHG emission; recycle it reduces this; refilling several times then recycling reduces it further; buying them occasionally then refilling and recycling reduces it some more; and by not using them at all you cannot create any GHG emissions relating to single-use plastic bottles.

On the whole, this concept is second nature to a heat treatment business when it comes to physical objects, for instance furnace furniture, but even energy usage can be looked at in this way:

1. Turn a furnace off when not in use.
2. Invest in better furnace insulation, more efficient burners and digital control.
3. Can waste heat be used as space heating or load pre-heating?

Intangibles are more difficult to fit in to this hierarchy, but the inclusion of "How could we do things differently?" will help. For instance: can business travel be replaced or reduced with video conferencing?; can

paper systems be replaced with electronic ones?

It may be useful to get an outsider's view of the business in this regard. It is surprising how we can miss things because of familiarity or assume that things cannot be changed because they have always been like that. Do take care with whom you choose to do this however; we have already seen that even experts do not agree on what or how things should be measured.

We exist to provide a service to our customers, but possibly these service levels need to be reduced for us, in turn, to reduce our GHG emissions. Examples might be only to process full furnace batches, which might cause delays, and load sharing, which might not be acceptable from a quality specification. Customers have their own environmental issues to address and have more of an open ear to listening to their suppliers' problems and remedies. After all, their GHG emissions become less if ours do when they consider their whole supply chain.

There is only so much we can do because the scale of the problem requires countrywide and, in reality, global solutions; in other words, a top-down approach. It is highly improbable that any heat treater can generate all their own energy from, say, solar power and wind power with battery storage or hydrolysis for hydrogen generation.

It is the role of governments to enact clear policies, legislation and fiscal models to make it happen. Our role is to firmly but vociferously point them in the right direction whilst looking carefully at our own organisations to identify how we can reduce our GHG emissions and, most importantly, to implement it.

Campaigning for Government support on energy

Wallwork's Richard Burslem, leader of CHTA's team at the recent Westminster event, reports…

The Surface Engineering Association has, for many years, arranged briefing sessions at The House of Lords where members, including CHTA, can informally present their concerns to a number of interested politicians, from both houses, and relevant civil servants. The latest one, on 20 April, focused on topics all to do with energy, particularly electricity. A delegation of six CHTA members was able to point out that virtually all manufacturing relies upon having a vibrant heat treatment industry and that we are a green industry, allowing treated components to use less material and to last longer. We were able discuss our experiences and suggest some remedies particularly:

1. A temporary suspension of the collection of all of the non-commodity charges on energy bills for our sector whilst energy prices are so high.
2. The inclusion of our SIC code 25610 onto the list of eligible energy-intensive sectors.
3. Regulation of energy brokers to ensure that contracts they offer are clear, can be terminated with reasonable conditions and do not profiteer.
4. An overhaul of the energy market so that market prices are linked to wholesale prices.
5. Direct fiscal support for our sector on the journey to net zero.
6. Recognition that there needs to be a large increase in electricity generation and storage as road fuel and domestic heating are replaced by electricity.
7. A clear long-term energy policy to provide certainty and attract investment.
8. Action to combat 'carbon leakage', the importation of goods manufactured in countries that produce electricity mainly from coal.

Whilst we were listened to sympathetically, the reality is that our sector is a very small part of manufacturing, even though it is critical to the production of almost all manufactured goods, either directly or indirectly, and progress on all the above will be slow. Until then, libraries and museums will be able to benefit from being defined as energy-intensive industries but heat treatment of metal will not.

We extend our thanks to Lord Whitby and Stuart Bailey MP for taking an interest in heat treatment and surface engineering and championing our cause.

Another reason for Government energy support?

Referring to *Hotline* 171's article "When will Government recognise heat treaters as a vital ENERGY-INTENSIVE link in the UK supply chain?", Tom Morrison, CEO of the Metal Treating Institute, our North-American counterpart, comments…

The US market is beginning to see pressure and rules related to thermal process heating that seek to push renewable energies as well as drive up the cost of energy such as natural gas. One element I did not see in your article was the mention of "Public Health and Safety" being a consequence of the path governments are on.

We have discussed the implications that, as renewable energies are pushed and the cost of natural gas rises, the heat treating process is put at risk. The last thing you would want to do is jeopardise a process that impacts airplane landing gears, wheels/cables in elevator shafts, key automobile components and semi-truck parts, to name but a few.

Heat treating is vital to keeping people safe and moving about life during the day, from the moment they wake up to the moment they go to bed. To force inadequate energy sources on an industry that plays that important a role in society will have major potential consequences.

We are producing a white paper over the next few months to help the National Association of Manufacturers connect the dots of energy policy to public safety when it comes to heat treating.

Something to think about letting the politicians and regulators understand.

Meantime, the Metal Treating Institute would like to congratulate CHTA on celebrating its 50th-year anniversary. CHTA has been a huge influence over its history in the UK and we look forward to seeing you continue your strength of service to the heat treating industry in the next 50 years.

Seen at CHTA's 2023 AGM

Some 60% of members were represented amongst the delegates attending CHTA's May 18th Annual General Meeting. Staged at SEA's Federation House headquarters in Birmingham, the event again proved an excellent opportunity for convivial networking and was addressed, for the first time, by SEA President Lord Whitby.

SEA CEO Dave Elliott updated on SEA/CHTA Government lobbying on energy costs.

It was announced that Alan J Hick, seen here with Lord Whitby, will be now be retiring as CHTA Secretary and *Hotline* Editor in 2024.

Guest speaker on "Optimising energy purchasing", Liam Conway of Control Energy Costs is flanked by Kepston's Chris Marsh (left) and Bodycote's Steve Fletcher.

L to r: Phil Hyland (Ajax Tocco International), Arthur Miles (Mat-Tech Joining Technologies), Tim Pelari (Wallwork) and Kevin Bannister (Tamworth Heat Treatment).

Andy Borg and Keith Laing of Aalberts Surface Technologies Heat alongside Wallwork Heat Treatment's Richard Burslem and Ian Griffin.

John Southall of ADI Treatments with Wallwork's Craig Richards and Paul Towler.

Nichola Mitchell and Shaun Rowlands of Heat Treatments (Northampton) with Mike Fielden of Techniques Surfaces UK.

Pranesh Latchayya (KTH Holts) with Arron Rimmer and Simon Day of ADI Treatments.

As Vice-Chairman, Tim Pelari presented CHTA's progress report.

Mike Long (Alpha-Rowen) with Paul Handley (Heat Treatment 2000).

Wallwork's Simeon Collins with Ian Perks of Alloy Heat Treatment.

Dave Elliott and Lord Whitby with CHTA Chairman Roger Haw (Flame Hardeners).

Member news

CHTA MEMBER ON TV NEWS

Tipton-based Alpha-Rowen Ltd featured prominently in an item on business energy costs shown on *ITV News Central* in May. Film of the CHTA member's site included an interview with Managing Director Mike Leach who commented on the dramatic impact of six-fold increases in energy costs. The footage appeared alongside an appeal, by West Midlands Mayor Andy Street, calling on energy suppliers to free firms stuck on high fixed-rate energy deals arranged last year during the massive hike in prices. He maintained that they had a "moral responsibility" to renegotiate.

In 2022, Mr Street established the West Midlands Industrial Energy Taskforce to identify ways manufacturers in the region can be supported through the energy crisis and to lobby Government on their behalf. It has a business-led panel making urgent recommendations to the Mayor and Government to minimise the impact on West Midlands jobs and the regional economy.

BODYCOTE RECEIVES APPROVAL FOR EMISSIONS TARGETS

Bodycote recently announced its near-term science-based emissions target has been approved by the Science Based Targets initiative (SBTi).

SBTi is an independent global body enabling businesses to set and validate emissions reduction targets in line with the latest climate science and strict criteria. The initiative is a collaboration between CDP, the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF) and one of the We Mean Business Coalition commitments.

Science-based targets provide a clearly-defined pathway for companies with ambitious climate goals to reduce greenhouse gas emissions, helping prevent the worst impacts of climate change and future-proofing business growth.

NEW GENERAL MANAGER AT TSUK

With some 30 years' experience in heat treatment, including spells with members Wallwork, Kepston and Aalberts, Mike Fielden has joined Birmingham-based Techniques Surfaces UK Ltd as General Manager.

Mike replaces Mark Florance who has stepped back from the role he has held for 28 years and is assisting on a part-time basis until fully retiring in July.

Techniques Surfaces UK provides surface treatment processes including the "controlled liquid ionic nitriding" treatments Arcor and Sursulf.

Mike said: "I am delighted to join the company when the diversity of process routes available in the UK is crucial to the competitiveness of UK industry. Liquid nitriding gives some unique technical, environmental and process control advantages. Energy efficiency is really good, plus there is no reliance on ammonia or natural gas in any of our processes."

Mike acknowledged that: "Mark Florance has been a well-respected figure in our industry for such a long time. It is an honour to continue to develop the business that he has steered so well over the years."

FORTHCOMING EVENTS

Diary

June 12-14 2023
BASICS OF HEAT TREATING
ASM Education virtual option online
www.asminternational.org/learning/courses

June 12-16 2023
THERMPROCESS 2023
Düsseldorf, Germany
"International Trade Fair and Symposium for Thermo Process Technology": *www.thermprocess-online.com/*

June 14 2023
INTRODUCTION TO ENGINEERING METALLURGY
Grantham, England
A one-day IoM3 course exploring the basic concepts of metallurgy
www.iom3.org/careers-learning/trainingacademy/materials-courses-and-qualifications/engineering-metallurgy.html

June 15-16 2023
HEAT TREATING FURNACES AND EQUIPMENT
ASM Education virtual option online
www.asminternational.org/learning/courses

June 20-22 2023
PRI WEBINAR: INTRODUCTION TO PYROMETRY
PRI Training (pri-training.com)

July 5-6 2023
A3TS 2023
Mulhouse, France
49th congress on heat treatment and surface engineering.
https://en.a3ts.org/evenements/congres-a3ts-2023-mulhouse

July 13 2023
PRI WEBINAR: HEAT TREATMENT OF ALUMINIUM ALLOYS *PRI Training (pri-training.com)*

July 27 2023
CHTA PUBLICITY SUBCOMMITTEE*
Birmingham, England

August 1 2023
PRI WEBINAR: HEAT TREATING: NADCAP AUDIT CRITERIA REVIEW *PRI Training (pri-training.com)*

August 3-4 2023
PRI WEBINAR: INTRODUCTION TO PYROMETRY
PRI Training (pri-training.com)

August 8-9 2023
PRI WEBINAR: INTRODUCTION TO PYROMETRY
PRI Training (pri-training.com)

August 10 2023
CHTA MANAGEMENT COMMITTEE*
Birmingham, England

August 30 2023
PRI WEBINAR: HEAT TREATMENT OF ALLOY STEELS
PRI Training (pri-training.com)

September 5 2023
PRI WEBINAR: BASIC HEAT TREATMENT
PRI Training (pri-training.com)

September 6-7 2023
PRI WEBINAR: INTRODUCTION TO PYROMETRY
PRI Training (pri-training.com)

September 7-8 2023
VACUUM HEAT TREATING
ASM Education virtual option online
www.asminternational.org/learning/courses

September 12 2023
PRI WEBINAR: BASIC METALLURGY OF HEAT TREATMENT *PRI Training (pri-training.com)*

September 13-14 2023
UK METALS EXPO
Birmingham, England
This NEC exhibition/conference is billed as "the only event that brings together the entire metals supply chain".
https://ukmetalsexpo.com

September 18-20 2023
HEAT TREAT BOOT CAMP
Pittsburgh, USA *www.heattreatbootcamp.com*

*Members wishing issues to be raised at CHTA meetings should notify CHTA's Secretary, well beforehand, at *mail@chta.co.uk*.

Market Movements

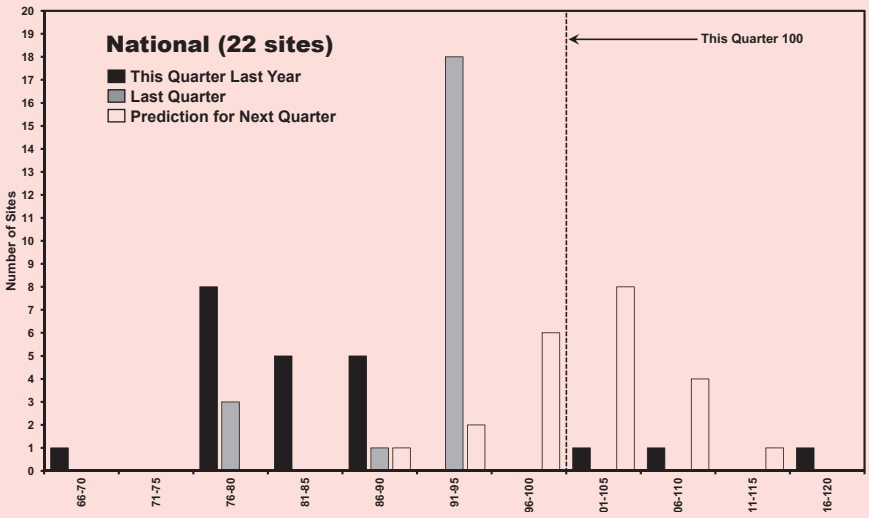
ANALYSIS OF QUESTIONNAIRE REPLIES RELATING TO 22 CHTA MEMBER SITES

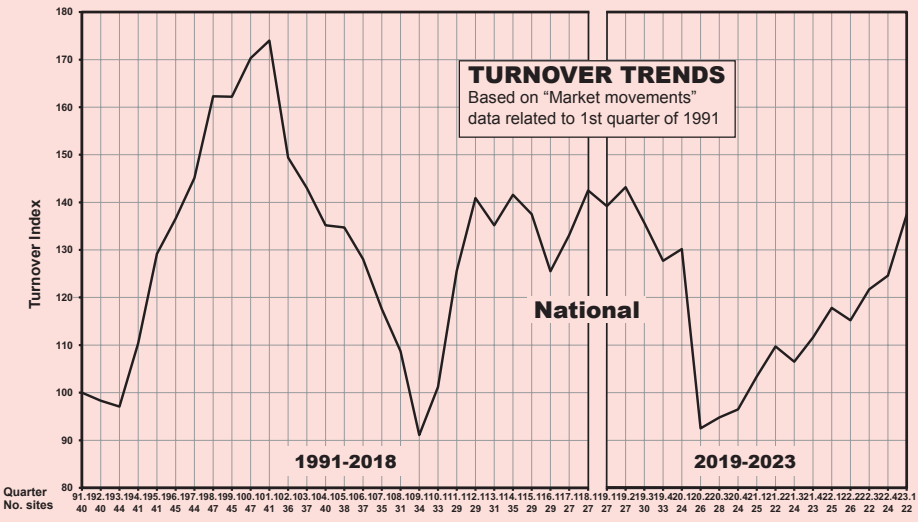
"THIS QUARTER" =

1 JANUARY - 31 MARCH 2023

= TURNOVER INDEX 100

OVERALL ANALYSIS (22 SITES)	Mean index
This quarter last year	86
Last quarter	90.7
Predicted next quarter	101.7





September 27 2023
SPAIN HEAT TREATMENT CONGRESS
Bilbao, Spain *http://metalspain.com/heat-treatment.htm*

October 2-3 2023
NADCAP AUDIT PREPARATION - HEAT TREATING
Cambridge, England *PRI Training (pri-training.com)*

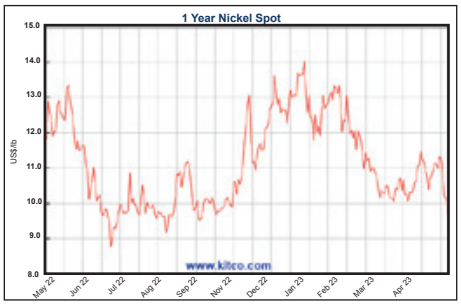
October 4-5 2023
INTRODUCTION TO PYROMETRY
Cambridge, England *PRI Training (pri-training.com)*

October 17-19 2023
HEAT TREAT 2023
Detroit, USA
32nd ASM Heat Treating Society conference/exposition
www.asminternational.org/web/heat-treat/home

October 20 2023
SEA AWARDS AND CHTA 50TH ANNIVERSARY GALA DINNER
Birmingham, England *www.sea.org.uk/2023-awards/*

October 24-26 2023
79TH HÄRTEREIKONGRESS
Cologne, Germany
Heat treatment congress and exhibition: *www.hk-awt.de/*

NICKEL PRICE (US$/lb)



Please send comment and news items for September's *Hotline* 173 to: *mail@chta.co.uk*
Deadline: August 11th