



**HORIZON**  
SUSTAINING TOMORROW, TODAY



# WATER

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# AVK IN THE UK

## WHO WE ARE



**DONKIN**  
Chesterfield



**SYDDAL**  
Manchester



**AQUA-GAS MANUFACTURING**  
Corby



**HEAD OFFICE**  
Northampton



**GLENFIELD INVICTA**  
Kilmarnock



**GLENFIELD INVICTA**  
Maidstone



**FUSION**  
Chesterfield



**ATLANTIC PLASTICS**  
Bridgend

AVK UK is part of the globally renowned AVK group with over 100 production and sales companies worldwide, and are known as one of the leading innovators and manufacturers of high quality valves and fittings for the water, waste water, fire fighting and gas industries worldwide.

AVK in the UK have manufacturing sites in Corby, Chesterfield, Kilmarnock and Hyde. These are supported by sales and marketing in Chesterfield, Northampton, Hyde, Maidstone, Prestwick, Bognor Regis and Bridgend with distribution centres in Chesterfield, Corby, Maidstone, Kilmarnock and Bognor Regis.

Our product specialists carry out design and development in our state of the art technology centre in Denmark while sales and distribution are handled by local AVK sales companies, agents and distributors worldwide.

Only by listening to our customers, will we be able to live up to the market expectations and we value the importance of local customers being serviced by local sales organisations. Customer feedback, local market intelligence, component quality and environmental considerations are at the forefront of our design processes. In cooperation with the end user, new products are field tested before the final market launch, thus achieving the best result in individual markets.

These considerations ensure that AVK are, at all times, pro-actively providing technically advanced products. Our products comply with, and often exceed, the highest standards of safety and durability and are in accordance with all common national and international standards such as BS, EN, ISO, CEN, DIN, GB AWWA, JWWA and many more.

Within the AVK group is AVK GUMMI which produces all the rubber used for AVK products and are known as one of the world leaders in rubber technology.

With local technical expertise and on-site service teams, AVK in the UK also offers its customers product identification, diagnostics, selection and application advice. We also hold product training courses and operating & maintenance guidance.

All AVK customer facing staff hold the relevant Site Safety Passport and where necessary confined space and other relevant certification.

## ‘WE CAN ALL CONTRIBUTE’



In 1972, the United Nations Conference on the Human Environment in Stockholm introduced environmental issues as a matter of global concern. Today, carbon footprint and net zero sit alongside finance, operations, health and safety, marketing, sales and HR as essential components of business strategy.

Horizon looks at the steps being taken at Group level, and across each AVK business in the UK, to improve our environmental performance. It also touches on the significant contribution our products and services make to creating a more sustainable future for the generations to come.

AVK in the UK is committed to a substantial investment programme covering, for example, the installation of solar panels, EV charging points, and efficiency improvements. The recent addition of Emily Wallace to our environmental team is further proof of this commitment.

I hope you enjoy reading this edition of Horizon as much as I have. The clear message I came away with is that we can all contribute, both at work and at home, to making the world a better, greener, more sustainable place to live.

*Paul Hubbard, Chairman AVK UK Group, and Group Management Board member at AVK Holding A/S.*



# WELCOME TO HORIZON, AVK IN THE UK'S LATEST SUSTAINABILITY REPORT

Welcome to Horizon, AVK in the UK's first Sustainability Report. Published on an annual basis, Horizon reflects our ambition to embrace all aspects of sustainability: Environmental, Social and Governance (ESG).

Horizon sets out our sustainability objectives and targets, as well reporting on our performance over the previous twelve months. This first edition of Horizon remains largely focussed on the environmental dimension of sustainability, previously published in AVK UK Green Papers. Future editions will include greater coverage of social and governance matters.

## The importance of sustainability

The articles, data and graphics in this issue of Horizon illustrate the vital importance of global sustainability to the quality of life we, and our families, experience. It outlines the sustainability policy context and lead provided by AVK Group and explains the approach we are taking in the UK to enhance our environmental and sustainability performance as an organisation, along with some of the many actions we have already taken over the last 12 months.

In October 2023, Michael Day became AVK in the UK's first dedicated Environmental Manager. Michael has recently been joined by Emily Wallace, Environmental Graduate; you can read more about Emily and the data analysis work she is undertaking on page 9. The recruitment of Michael and Emily is a clear indication of the importance of sustainability to the business, our customers and our suppliers.

## AVK Group - the strategic context

AVK in the UK is part of the AVK Group which is committed to achieving carbon neutrality, and striving for Carbon Net Zero.

Each year, AVK Group publishes an extensive Sustainability Report. You can view the latest version at [avkuk.co.uk](http://avkuk.co.uk).

New EU legislation – the Corporate Sustainability Reporting Directive

(CSRD) – requires increased reporting on ESG issues. Partly driven by the new legislation, Michael Christensen, Group Sustainability and ESG Manager, is currently undertaking a double materiality assessment. This is a comprehensive assessment of how sustainability issues are impacting on AVK Group, from external factors which can or could impact us, to the impact our activities have with regards to the same sustainability issues. The findings of this assessment will drive a review and refinement of the Group's sustainability approach, with changes being implemented across 2025.

Regardless of the findings of the double materiality assessment, the Group's ambitious and demanding headline targets will remain the same. AVK globally has set a target of achieving Carbon Neutrality by 2030 and Net Zero by 2040. The headline AVK Group sustainability targets are listed below.

As the most important market outside Scandinavia, AVK companies in the UK have a critical part to play in ensuring these targets are achieved. Consequently, the Group targets feed into those being pursued by AVK in the UK. The UK targets and actions are discussed in Michael Day's overview on the following page.

We hope you enjoy reading this first issue of Horizon, and feel empowered to actively engage with the sustainability agenda and actions.

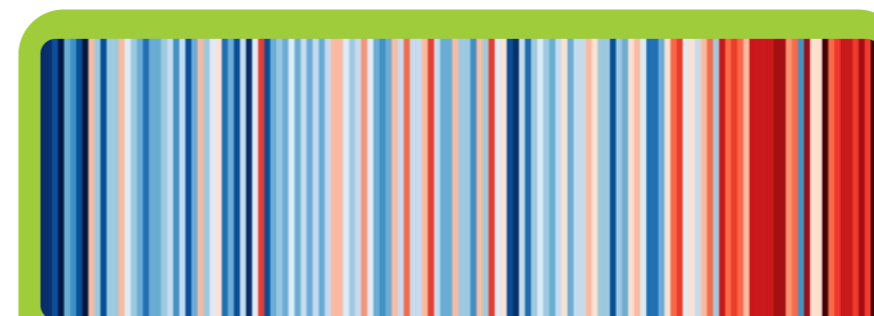


# INTRODUCING MICHAEL DAY, OUR DEDICATED ENVIRONMENTAL MANAGER

## ACTION PLAN

Welcome to this edition of Horizon, my first as the Environmental Manager covering all UK operations.

My aim here is to: illustrate the vital importance of global sustainability to the quality of life we, and our families, experience; outline the sustainability policy context and lead provided by AVK Group; and, explain the approach we are taking in the UK to enhance our environmental and sustainability performance as an organisation, along with some of the many actions we have already taken over the last 12 months.



Each stripe represents the temperature in the UK averaged over a year. The graphic above ranges from 1884 to 2023, with blue colours representing temperatures below average and red representing temperatures above average. The darker the colour of stripe, the further away from average temperature. See more at



## Sustainability and AVK in the UK: context, action, engagement

AVK in the UK has long worked to reduce its environmental impact and carbon footprint. I am proud to have been appointed as the first dedicated Environmental Manager charged with optimising all our activities in this area.

## At the global level, green house gas (GHG) emissions continue to rise

There are clear moral reasons for each and every business to contribute to the protection of our planet.

On 24 October 2024, the United Nations published its Emissions Gap Report 2024. Sub-titled 'No more hot air... please!', the Report emphasizes that without immediate and dramatic action, the 1.5°C goal to cap rising temperatures set in the 2015 Paris Agreement on climate change, will soon be dead.

In 2023 GHG gas emissions set a new record. However the Emissions Gap Report shows that there is still significant potential to almost halve emissions by 2030. Boosting renewable energy sources, most notably solar and wind, could contribute 27% of this reduction by 2030, and forest conservation could provide around 20%. Other key strategies include enhancing energy efficiency, electrification, and transitioning from fossil fuels.

You can read more about the report here: [Emissions Gap Report 2024 | UNEP - UN Environment Programme](#)

I hope, as you read this report, you will see that the sustainable strategies, plans and actions being implemented across the AVK Group, and AVK in the UK in particular, strongly reflect the priorities as identified by the United Nations.

We can all play our part in making the world a safer, healthier place to live for future generations.



### The business benefits of sustainability

There are clear benefits to our business from operating in an environmentally conscious manner.

Our lean philosophy dovetails well with environmental protection, as we seek to reduce the consumption of energy, water and raw materials. The lean focus on the elimination of waste delivers both cost savings and a reduction in the environmental impact of our operations and products. Furthermore, from a brand equity perspective, a strong environmental commitment delivers added value to our customers.

Our customers are increasingly looking to their supply chains to support and assist them in their own carbon reduction journeys. The importance of such collaborations, and the demand for suppliers to make substantive contributions to reduce carbon emissions, will only increase across the coming decade.

Unsurprisingly, sustainability is associated in most people's minds with measures that positively impact the environment. However, ESG is far broader than that. For example, AVK in the UK is committed to having a proactive approach to community involvement and supporting designated charities through events such as the Walk 4 Water. A snapshot of the different social activities delivered over the past twelve months can be found in the pages of this report.

### The actions we are taking to reduce our Carbon footprint

Over the past five years there has been a dramatic move from 'talking the talk' to 'walking the walk'. Employees, suppliers and clients all want to see action.

AVK in the UK has set a series of objectives and targets for environmental areas such as carbon, energy, waste and packaging.

### Actions - Today

In the UK we have identified a number of key initiatives to drive environmental performance. The first initiative is mundane, but absolutely fundamental. We have to have accurate, timely and relevant data to measure the effectiveness of our environmental interventions. To achieve this we have adopted the Achilles Carbon Reduce scheme to define our data collection methodology and to provide external data verification. You can learn more about the Achilles Carbon Reduce scheme on page 12.

We have established a robust baseline for the carbon footprint of our direct operations (GHG - Greenhouse Gas - Scope 1 and 2 emissions). The next phase is to set a series of staged reduction targets which will drive us towards our 2030 carbon neutral target. This approach allows us, as a matter of routine, to track our performance and, critically, to identify areas where additional focus and action are required.

Within this report you will learn about further initiatives that have been successfully delivered in the last 12 months. I would take this opportunity to publicly thank and congratulate those involved in identifying and delivering them.

### Actions – The Future

To achieve further improvements in performance we will need to develop a funnel of further carbon reduction projects. I encourage all of you reading this report to harness your knowledge and skills to contribute ideas to this.

The Carbon Reduce scheme has given us an excellent insight into the carbon emissions of our operations. We now have to move down our supply chain and improve the carbon data provided by our suppliers in order to establish a holistic picture of our environmental impact. (GHG Scope 3 Carbon).

The UK Government's policy goal is to achieve Net Zero by 2050. AVK in the UK is more ambitious, and has set its Net Zero target at 2040. The calculation of our Scope 3 emissions, against which our 2040 Net Zero

target will be assessed, will undoubtedly see a significant increase in our carbon footprint, when compared with solely Scope 1 and 2 emissions. It will require a collective and continuous effort on the part of AVK in the UK and its supply chain to achieve Net Zero 2040.

The products manufactured, assembled and distributed by AVK in the UK deliver significant positive environmental outcomes for our customers. However, of ever-increasing importance will be the calculation and reporting of the embedded carbon within those products. My colleague, Emily Wallace, will take the lead on developing Life Cycle Assessment (LCA) data and the delivery of Environmental Product Declarations (EPD). Emily's work will generate the information being requested by our customers, and provide insights into carbon across our supply chain.

AVK Group's environmental strategy includes a drive to deliver the requirements of the ISO 50001 Energy Management Standard across all operating companies, wherever they are in the world. While all UK companies are already purchasing carbon-neutral electricity, ISO 50001 will ensure that we remain focussed on delivering energy use reductions.

### Actions – You!

The final strand of our environmental strategy is you! We are committed to engaging with each and every employee to ensure we are delivering on your priorities.

How do we start? Please feel free to involve me in any dialogue relating to our environmental activities. My role is to encourage and support you; to provide you with any relevant information you, and our customers, need.

Over time, our environmental commitments will become intertwined with, and indivisible from, our way of doing business.

### Feedback

My colleague, Emily, and I are always open to feedback and ideas. You can catch me at mida@avkuk.co.uk or 01246 479 120.

I hope you enjoy the contents of Horizon and Emily and I look forward to working with you in the future to drive forward our collective environmental agenda

## OBJECTIVES & TARGETS

### 1. Carbon

- Be a carbon neutral business for scopes 1 and 2 by 2030
- Be a Net Zero business for scopes 1, 2 and 3 by 2040
- Measuring of carbon emissions validated through the Achilles carbon reduce scheme by the end of the 2025 financial year.

### 2. Reduction of energy consumption

- Reduction of energy use
- Achievement of ISO 50001 standard across all businesses by the end of 2026

### 3. Waste

- Zero waste to landfill across all businesses
- Waste reduction
- Increase reuse/recycling rates

### 4. Packaging

- Increase recycled content within packaging material

### 5. Water

- Reduction in water use

### 6. Provision of environmental information to customers

- Production of Environmental Product declarations with 3 EPDs to be produced by the end of 2025
- Development of AVK in the UK sustainability report to demonstrate performance against range of Key Performance Indicators



Pictured left to right, Michael Day, Michael Christensen (Group Sustainability & ESG Manager), Chris Leese and Emily Wallace

# EMILY WALLACE, THE NEWEST MEMBER OF THE SUSTAINABILITY TEAM ACTION PLAN



Working alongside Michael Day, Emily Wallace has joined the AVK sustainability team with a remit to undertake in-depth analysis of the organisation's data on carbon emissions.

Emily will also assist Michael with product life cycle assessments (LCA) which track a product's carbon impact from raw materials all the way through to end of life.

In June 2024, Emily graduated from Newcastle University with a first-class degree in Environmental Science:

'At school I had a passion for the physical aspects of geography and biology. As a degree course, Environmental Science draws on both geography and biology, as well as chemistry, geology and statistics. I really enjoyed the digital aspects of the degree including GIS (Geographic Information Systems) mapping, and data analysis.

I'm really looking forward to applying the academic skills and knowledge I developed at university to practical sustainability challenges across AVK.'

As part of her degree studies, Emily spent a year studying at the Czech University of Life Sciences in Prague:

'It was an amazing experience to live in the Czech Republic. I was studying alongside a cohort of students from around the world, and many of the modules focused on global aspects of sustainability and environmental policy.'

In July-August 2022, Emily was a 'green volunteer' with the National Trust for Scotland working in the area around the Five Sisters of Kintail, a wild and beautiful mountain range in the Northwest Highlands of Scotland:

'We were a team of fourteen volunteers paired with National Trust rangers. Together we worked on managing footpath erosion, and protecting the natural environment from invasive species.'

Emily believes that reducing carbon emissions and exploiting a wider variety of energy sources are critical challenges to overcome to achieve a sustainable future. Emily has a particular interest in geothermal energy which involves drilling 900m+ deep boreholes into rocks and extracting water which has been heated by the thermal energy in the rock strata.

Outside work, Emily enjoys wild swimming, including dips in the North Sea. She is also a keen hiker and runner.



# WHAT ARE THE GOVERNMENT'S PLANS - WILL WE BE GREENER?

In the general election held on 4 July 2024, Labour won 411 seats out of the 650 seats contested. This sizeable majority gives Labour the opportunity to implement their key environmental manifesto commitment: '... to make Britain a clean energy superpower'. What does '... making Britain a clean energy superpower' mean in practical terms, and what difference could it make to our lives and to AVK in the UK?

One of the bills in the King's Speech of 17 July was the Great British Energy Bill. This bill enables the creation of the publicly-owned Great British Energy with the stated aims of:

'... investing in clean energy across our country, and making the UK a world leader in floating offshore wind, nuclear power, and hydrogen.'

Source: <https://great-british-energy.org.uk/>

Great British Energy has been established with £8.3bn of funding. Its aim, working with private sector organisations, is to double onshore wind, triple solar power, and quadruple offshore wind by 2030. As well as supporting national capital-intensive projects such as offshore wind farms, Great British Energy is tasked with facilitating small-scale clean power projects based on onshore wind, solar and hydropower.

The Government has stated that it plans to retain a strategic reserve of gas power stations to guarantee security of supply, however the focus in the manifesto is very much on green hydrogen. AVK's involvement in many of the trial hydrogen projects underway across the UK should ensure it is well-placed to benefit from any future commercialisation of mains hydrogen.

In parallel with the push to increase green energy, The Government's manifesto stated it would ban fracking for good, not grant new coal licences, and not issue licences to explore potential new oil and gas fields in the North Sea.

From an AVK perspective, we need to continue taking a detailed look at our current energy usage and future energy needs to ensure we are prepared for the planned transition to renewable sources.

The Water (Special Measures) Bill was also announced in the King's Speech. The aim of the bill is to give Ofwat, the economic regulator of the water and sewerage industry in England and Wales, new powers to increase the accountability of water company executives, particularly with regards to the discharge of sewage into water courses. AVK's smart water sensors and smart air valves will have a part to play in ensuring sewage network capacity is optimised and unauthorised discharges are reduced.

The Government has also stated that it would be more proactive in putting failing water companies into special measures. Thames Water, for example, was put into special measures on 11 July 2024. In all likelihood, this was a decision that was put on hold by Ofwat until after the election to ensure it did not influence voting intentions. The situation highlights the financial challenges facing the water industry at a time when a significant increase in funding is needed to increase sewage treatment capacity, tackle flooding, and reduce leakage.

However, the initiatives within the Water (Special Measures) Bill will take time to make an impact. It is highly likely that there will be further legislation introduced to protect and restore seas, lakes, rivers and other water courses.

At a household and individual level, The Government's Warm Homes Plan is aiming to invest £6.6bn over the next five years to insulate homes, and other measures to reduce fuel poverty. Labour has also stated that it will create nine new National River Walks to improve access to nature. Three new National Forests in England is just one policy focused on protecting wildlife and landscapes, and promoting biodiversity.

It remains to be seen whether Labour can deliver on the sustainability commitments in its manifesto, or whether harsh economic realities weaken their resolve.



## SUSTAINABILITY

### WE HAVE A LONG-TERM APPROACH





# STEPS WE'RE TAKING TO HELP REDUCE CARBON ACTION PLAN

## Lean Principles - Group Wide

It could be argued that there is almost a symbiotic relationship between lean thinking and sustainability. With its core drivers of identifying and eliminating waste and value creation, lean thinking does appear to be a tool with a major contribution to make towards sustainable manufacturing.

Originating in Japan in the 1950s, lean thinking is associated in many people's minds with terms such as six sigma (defect and error reduction), kaizen (continuous improvement) and kanban (card used to authorise production or movement of an item). Across the global AVK Group, lean thinking is applied to all manufacturing and operational processes and systems to drive efficiencies.

Extending lean thinking by incorporating a stronger sustainability dimension - green

lean - is not a big step. After all, the sustainable living mantra of 'reduce, reuse, recycle' is, effectively, saying minimise waste. Here are just a couple of examples of how straightforward it can be to broaden lean thinking to include a sustainability focus:

**Energy:** Traditionally lean thinking would focus on minimising energy consumption. A green lean approach would also consider the type of energy being used i.e. renewable energy would score higher than carbon-intensive energy sources.

**Materials:** If you use wood within your manufacturing and operations, is it from renewable sources? With pallets, can we eliminate them from our logistics? If not, does our pallet supplier use recycled timber?

This last point highlights the need for supply chain collaboration to get the most from green lean thinking.

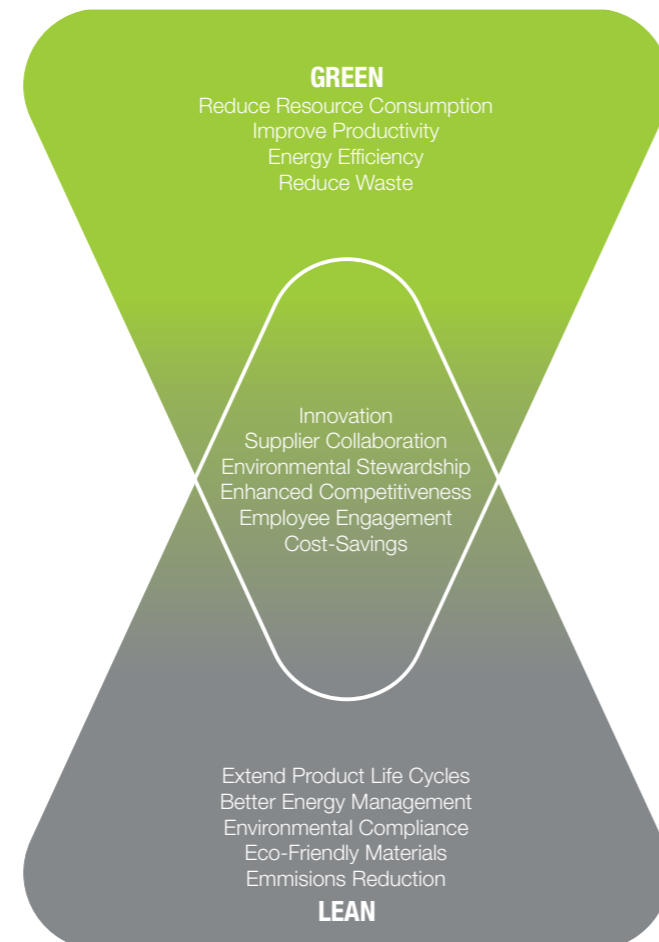
## Carbon Reduce - Group Wide

It is an AVK in the UK environmental strategy priority for all companies to achieve Carbon Reduce accreditation. To date, AVK UK, Fusion and AtPlas have been accredited and Glenfield Invicta will complete the process in the near future.

Carbon Reduce was initially developed by New Zealand climate scientists. It is an internationally recognised programme and framework that enable organisations to report their Scope 1, 2 and 3 carbon emissions. In addition to reporting carbon emissions, Carbon Reduce helps organisations to develop environmental best practice capabilities and achieve sustained carbon reductions.

There are significant costs associated with achieving and maintaining Carbon Reduce accreditation. So, what are the benefits of Carbon Reduce?

The primary reason for choosing Carbon Reduce is that it has international



credibility. The programme is accepted by governments, certification bodies, regulators and, most importantly, AVK's utility clients. A utility will accept Carbon Reduce-certified data whereas it may question data submitted by a supplier with no third-party verification. This is because measurements under the Carbon Reduce scheme are independently verified to demonstrate they are in line with the requirements of ISO 14064-1:2018. ISO 14064-1:2018 covers the principles and requirements at the organisation level for the quantification and reporting of greenhouse gas emissions and removals, and with the Greenhouse Gas Protocol requirements for emissions measurement. Carbon Reduce, therefore, removes a potential utility procurement barrier enabling our sales and marketing teams to focus on product and service benefits.

In the UK, Carbon Reduce is administered by Achilles. Achilles is a name that will be familiar to many readers, as it manages the UVDB (Utilities Vendors Database). UVDB is the leading pre-qualification system for companies selling into the UK utility sector.

**Continuing to reduce our carbon footprint**  
The AtPlas Supply Chain team have made huge strides in consolidating shipments to further reduce our carbon footprint. In the first seven months of 2024 the initial part of the project has concentrated on three of our largest customers which receive regular deliveries. The work completed has meant that the team have managed to reduce the number of shipments by 197 and miles travelled by 52,069, all while ensuring the customers receive exactly what they need, when they need it.

**Sustainable Matrix Range**  
The AtPlas Matrix range is known to be made from recycled material, this also includes the newly launched Matrix Multi box. While working on the sustainable operation of our business, it is hugely important that our product range is also part of these changes and improvements. As well as being made from recyclable materials, we also ensure that the end-of-life product is viable for recycling, therefore continuing the legacy and maintaining our commitment to sustainability.

## FUSION'S FOCUS ON PACKAGING



Reducing the metal, plastic and other materials consumed in product manufacture, primarily through product design changes and lean initiatives, is a key element in AVK's drive to minimise its environmental impact.

Less obvious, but no less valuable, is a focus across all companies to reduce product and transit packaging, particularly single use plastics, whilst ensuring that products continue to reach customers in pristine condition.

This article takes a look at some of the steps being taken by Fusion to reduce the carbon footprint of the packaging used for its electrofusion fittings.

Each electrofusion fitting is placed in a polyethylene bag at the point of manufacture. The prime driver is to protect the fusion zone from contamination, thereby ensuring the fitting is effective in creating a fully-welded joint on site. A secondary benefit is that the bag maintains the aesthetics of the product and reinforces the message of product quality and attention to detail.

Electrofusion fittings, like all products supplied by AVK companies, are subject to standards that dictate, among many things, the minimum requirements for product packaging. Fusion also has to be mindful of the requirements and perceptions of its global distributor and end-user base. In other words, there are product standard and marketing constraints on the packaging changes that can be made.

Here are just some of the steps Fusion has taken to remove and/or reduce product packaging:

- Single-use plastics, as opposed to recycled plastics, have been eliminated. Examples of this are the transition from plastic packing tape to a more sustainable paper alternative, and the use of paper document wallets instead of plastic.
- All plastic packaging used in Fusion's UK manufacturing and distribution operations now contains at least 30% recycled content.
- Where feasible, box quantities have been increased to minimise 'empty

space' and reduce the amount of cardboard used. Such changes have to ensure products are suitably packaged from a quality, and health and safety perspective. An example of the impact of these changes is that 32mm couplers were originally packed 20 per box but are now 80 per box.

- The above approach has also been applied to shipping full boxes and full pallets whenever possible.
- Metal or plastic banding is no longer used.
- Following the replacement of the WIS-4-32-14 standard with EN 12201-3, electrofusion fitting bags have been standardised to 300 gauge clear polyethylene; the WIS standard previously specified 500 gauge bags. This switch has reduced the thickness and weight of the bag.
- Fusion no longer uses shrink wrapping or pallet bags. Pallet topper bags have now been replaced with thinner and smaller pallet topper sheets which maintain the protection of palletised products. Palletised boxes of products are secured using a plastic wrap which has a minimum of 30% recycled content.
- Wooden pallets and cardboard boxes are only sourced from certified sources including the Endorsement of Forest Certification (PEFC) or the Forestry Stewardship Council (FSC).

If you have ideas as to how Fusion can further reduce their carbon footprint, please contact Lisa Shelton, Fusion Director, at lshelton@fusiongroup.com.





# AVK UK HARNESSSES SOLAR ENERGY FOR A GREENER FUTURE!

## ACTION PLAN



### Solar Panel Installation - Fusion

Fusion's global manufacturing site in China has recently installed solar panels that produced 356,632 KWh of electricity in the 2024 financial year, supplying an average of 10% of the facilities electricity requirements. This equates to a saving of around 207.6 tonnes of CO<sub>2</sub>e (value derived from displacement of grid supplied electricity using a 2023 carbon intensity of electricity generation for China).

### Solar Panel Installation - AVK UK

It is now a year since a 600-panel solar array was installed on the roof of the AVK UK manufacturing and assembly plant at Staveley, Chesterfield.

As can be seen from the table below, there is a considerable increase in electricity generation from March onwards as the number of daylight hours increases. This also coincides with a gradual increase in the amount of surplus electricity that is sold back to the grid. The monies received help to offset the initial build costs of the solar panel array and help support the

purchasing of all remaining electricity through carbon neutral sources.

The number of hours of sunshine in the UK was lower than average in 2024. The mean temperature for the summer season in the UK was 1.55°C cooler than the long-term average. This contrasts with the record-breaking temperatures experienced across much of continental Europe. The power generated by the solar array is expected to have the potential to increase generation by around 5% - 7% based upon greater sun hours in future years.

Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total Generation (kWh)	10700	5970	2809	4687	7577	15697	23031	27347	33041	31890	28134	14657
YTD	10700	16670	19479	24166	31743	47440	70471	97818	130859	162749	190883	205540
Export (kWh)	0	0	701.5	895.9	1632.1	5816	9661	13052	15139	12070	11586	4583



# TEN THINGS YOU CAN DO TO REDUCE YOUR CARBON FOOTPRINT

- 1** Calculate your personal carbon footprint.

An awareness of the impact your lifestyle has on the environment is the first step to reducing your carbon footprint. You can use online calculators such as the WWF Footprint Calculator.
- 2** Consider your mode of transport when commuting.

Commuting makes up 68% of an employee's carbon footprint. Cycling to work once a week can cut it by half a tonne annually—equal to a one-way flight from London to New York. Join AVK's Cycle to Work Scheme to get started.
- 3** Reducing food waste.

Planning your weekly meals and only buying what you need will reduce your carbon footprint due to reduced waste. If you cook too much food for a meal, try reusing leftovers for lunch the next day rather than throwing it away.
- 4** Unsubscribe from unnecessary emails.

A simple text email can emit around 4g of CO<sub>2</sub> through sending, processing in data centres and storage on devices. Limiting the amount of emails you receive can reduce your carbon footprint, after all, one email per day could be responsible for 1.46kg of your annual CO<sub>2</sub> emissions.
- 5** Refine email structure.

Sharing a link over email has a lower carbon footprint than attaching files. Consider sharing links rather than sending a large attachment which can have a footprint of up to 50g of CO<sub>2</sub>.
- 6** Use favourite and history functions when using the internet.

By using the favourite and history functions in the toolbar of your webpage, you can save on electricity compared to searching the internet for familiar or frequently used websites.
- 7** Rethink your coffee choice.

Lattes have a carbon footprint (before milk addition) of around 0.55kg, cappuccinos 0.41kg and flat whites 0.34kg. A flat white with a non-dairy alternative milk (almond milk emits 4.5 times less carbon than dairy milk) is an example of a coffee with a lower carbon footprint.
- 8** Consume UK meat.

Beef imported from Brazil can have a carbon footprint three times higher than UK beef due to transportation, deforestation in Brazil for cattle farming and soya production for cattle feed.
- 9** Purchase local and seasonal produce.

Purchasing and consuming UK seasonal produce has a lower carbon footprint as produce is grown without the use of artificial heat, thereby reducing energy consumption. Transport emissions are also reduced.
- 10** Use low carbon cooking methods.

Switching to energy efficient cooking techniques can reduce your carbon footprint. Using a kettle to boil water before transferring the water to a saucepan to cook vegetables is more energy efficient than boiling the water in a saucepan.



# HOW OUR PRODUCTS, SERVICES AND SOLUTIONS HELP REDUCE CARBON

The core focus of Horizon is on how we can reduce the carbon footprint of AVK's operations across the United Kingdom.

At the same time, the products and services supplied by AVK in the UK deliver sustainability benefits, both for those using them and for the general population.

Here is a quick snapshot of just some of these products and services.

## Putting the smart in sustainability

AVK Smart Water is a portfolio of intelligent products and sensors which are able to collect, communicate and visualise network data in near real time. The data helps network managers to optimise the operation of their water networks.

There are significant environmental benefits associated with optimising network performance. Managing pressure effectively can reduce leakage; this means energy isn't 'wasted' in the treatment of water that is subsequently lost. The VIDI positioner, used on valves and hydrants, indicates whether a valve is in the open, closed or intermediate position. This eliminates the need for engineers to travel round an area checking on valve positions, thereby reducing

fuel emissions as well as allowing them to focus on more productive activities.

The ARISENSE smart air valve is able to detect potential failures or faults, some of which have the potential to be catastrophic. Maintaining wastewater network capacity is critical, particularly as the industry invests to reduce the unauthorised discharge of sewage into watercourses such as the sea, rivers and streams. Such discharges are harmful to wildlife and expensive for water companies. In 2023, Thames, Yorkshire and Northumbrian Water were fined £168m over illegal sewage discharges.



AVK Smart Combination Air Valve, S.701/75

VIDI Intelligent Monitoring Sensors



Munnoch Reservoir 24" Gate Valve Replacement Before And After



## Valve refurbishment

Glenfield Invicta has an unrivalled reputation for the refurbishment of valves; when applicable, a more carbon-effective (and cost-effective!) alternative to buying new. Many of the refurbished valves carry Glenfield and associated brand names, with some having first been manufactured and installed over one hundred years ago. Here are just two examples from 2024:

### Munnoch Reservoir – Gate Valves

Two 24" gate valves, believed to have been manufactured in 1902, were found in dense undergrowth alongside Munnoch Reservoir in Ayrshire, pictured on the cover. The valves were cleaned, disassembled, and all components were subjected to a detailed condition assessment.

Based on the recommendations of the condition assessment report, Scottish Water decided to refurbish the two valves such that they could be returned to service (see before and after images above). The condition assessment and refurbishment works were undertaken by Glenfield Invicta's engineers at the company's workshops in Kilmarnock. Benefits of valve refurbishment, when compared to new replacement valves, include considerable carbon emissions savings, lower costs and faster turnaround. Returning a refurbished valve to its original location and function ensures the dynamics of the pipework/system configuration remain unchanged.

The refurbishment of these two valves will result in a saving of over 4.5 tonnes of CO2 emissions.

### Balmore Tunnel – Air Valve

There is a misconception that refurbishment is only effective for large valves; this is incorrect. Glenfield Invicta recently completed the comprehensive refurbishment of an air valve for George Leslie, a leading utilities contractor. The air valve played an important role on the Balmore pipeline, the main pipeline feeding fresh water into Glasgow, Scotland's largest city.

In the Glenfield Invicta workshops, the internal workings of the valve were carefully extracted. The valve casting was cleaned using advanced shot blasting techniques to remove paint, rust and other contaminants. High-performance coatings were then applied to both the internal and external surfaces of the valve casting. New internal components were engineered to enhance the performance of the air valve, and to ensure its longevity.

## Hydrogen distribution networks

In sustainability terms, hydrogen is a far cleaner alternative to natural gas. A switch to hydrogen could play a major role in helping the UK achieve its carbon reduction targets. One of the leading hydrogen research projects is the demonstration hydrogen gas network developed at the Spadeadam Research and Development Centre in Cumbria. The 1,000m network forms

part of the H21 project led by Northern Gas Networks with the collaboration of all other distribution network operators (DNOs), National Grid Group and the HSE Science Division.

The electrofusion fittings and fabrications on the Spadeadam network are supplied by Fusion; in total over 110 different products were supplied including Multiseal tapping tees, branch saddles and stub flanges in sizes ranging from 630mm down to 32mm. AVK UK has supplied nineteen variants and sizes of the Donkin Series 555 gate valves, along with a number of additional Donkin ball valves.

It is expected that hydrogen will initially be blended into the UK's gas network between 2025 and 2026. It is predicted that by 2050 the entire network could be converted to hydrogen.



## From cradle to end-of-life

A product's overall carbon impact tracks its journey from manufacture all the way to end of life. Wherever possible, AVK companies are seeking to use materials that can be reused or recycled at end of life. A good example of this is the Atlas Matrix Range of water boundary boxes, including the unique Matrix Multibox which can accommodate up to six water meters.

The Matrix Range is made from recycled materials and has also been designed to ensure that it is viable for recycling at end-of-life.





# SUPPORTING OUR LOCAL COMMUNITIES & CHARITIES



## Clothing Collection

Laura Coleman at AVK UK in Staveley has been the driving force behind two clothes collection days in March and September. Clothes collected by AVK UK employees were donated to The Clothing Bank, an inspirational charity formed by Susan Bell and Sally Parkinson in January 2020.

Susan and Sally's mission is to eliminate clothing poverty in communities across Yorkshire, Derbyshire and beyond. You can find out more about the charity at [www.theclothingbank.org.uk](http://www.theclothingbank.org.uk).

## Macclesfield RUFC Womens Sponsorship

AVK UK are proud sponsors of Macclesfield RUFC. Julia Nixon, Head of Marketing at AVK UK, summarised a recent trip as "inspiring to see their dedication and passion firsthand. I am proud that AVK UK Ltd is sponsoring this incredible team, supporting women in both business and sport, and I think we can all agree - the new kit looks great!"



## Second Sponsorship Deal for Corby U15's

The Corby Kingswood Stripes under-15s football team kicked off their season with a second sponsorship deal from AVK Aqua-Gas Manufacturing as they embark on their 2024/25 campaign. The teenagers, who play in Division 3 of the Weetabix Youth Football League, have been preparing for the season wearing the AVK logo.



# MENTAL HEALTH, A CORE PRIORITY

During Mental Health Awareness Week 2024 (13 to 19 May) each company organised events to draw attention to the importance of mental health and the role of mental health first aiders across the Group.

Mental Health Awareness Week is promoted by the Mental Health Foundation. The principal theme for this year's event was 'moving more for our mental health'. It is well recognised that regular physical activity improves mental health, quality of life, and wellbeing.

There are also many mental health-related activities that take place outside of Mental Health

Awareness Week. Here are just some of the many mental health-related activities that took place on AVK sites across the UK in 2023-24:

**AVK UK – Staveley:**  
 'Shake and wake' coffee mornings  
 Lunchtime office bingo  
 Tea and chat catch-ups  
 Wear it Green Day

**Atplas – Bridgend:**  
 World Mental Health Day – 'Mental health is a universal human right'  
 'Time to Talk' Day  
 Wear it Green Day  
 World Suicide Prevention Day

Suicide prevention training and other related resources can be accessed here: <https://zsa.frank-cdn.uk/scorm/gateway/story.html>  
 What you'll learn through the training, is:  
 See: How to spot suicide warning signs.  
 Say: How to have a conversation with someone you're worried about.

**Where to find further support:**  
 Survivors of Bereavement by Suicide: [uksobs.org](http://uksobs.org)  
 Papyrus UK Suicide Prevention: [papyrus-uk.org](http://papyrus-uk.org)  
 Campaign Against Living Miserably: [thecalmzone.net](http://thecalmzone.net)  
 Samaritans: 0116 123



## WALK4WATER

Over the spring and summer months, each AVK in the UK business has organised a Walk4Water and associated communal activities. As well as bringing people together, Walk4Water has raised funds for the amazing charity, Aquabox.

Whenever a natural disaster occurs such as an earthquake or flooding, or in times of armed conflict, displaced people often have little choice other than to collect water from whatever local sources they can find: streams, rivers, wells. As you can imagine, such water is often contaminated, unsafe to drink, and carries the risk of water-borne diseases like cholera.

In the UK we are extremely privileged in having a constant supply of treated potable water, and it can be extremely difficult to imagine the trauma and difficulties faced by those in need of water. The last indigenous case of cholera in England, for example, was in 1893; that's over 130 years ago!

Since it was established back in 1992, Aquabox has despatched over 125,000 water filters to disaster areas and conflict zones in over 50 different countries. It is estimated that the filters have converted 2bn litres of contaminated water into safe, clean drinking water.

Well done and thank you to everyone who took part in Walk4Water events in 2023/24. You are helping Aquabox to save lives. For more information about Aquabox and the amazing work they carry out, visit [www.aquabox.org](http://www.aquabox.org)

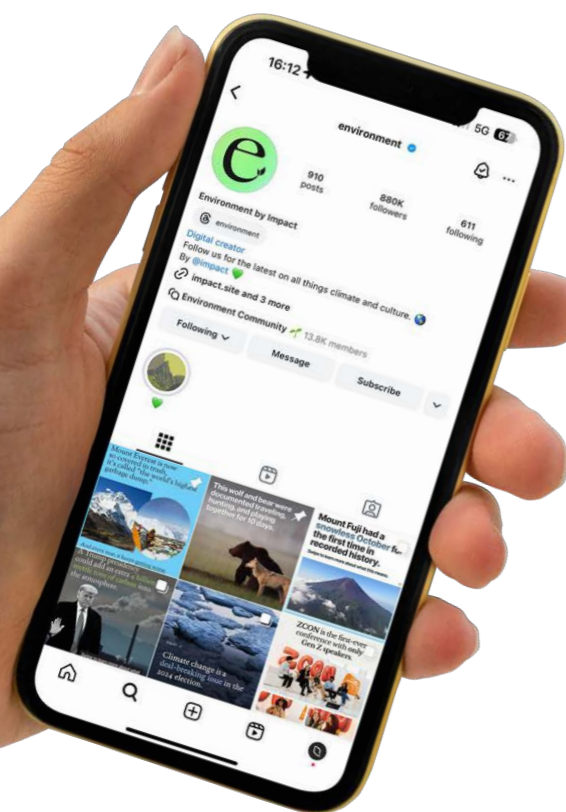




# READ, WATCH AND LISTEN. SOURCES OF NEWS AND OPINIONS

Where can I find the best environmental information and opinion?

We asked Michael Day and Emily Wallace to recommend the books, podcasts and social media they go to for a regular dose of environmental news and opinion. These are their recommendations:



## Podcasts

**Outrage + Optimism: Climate Change Podcast**

Explores the stories behind the climate change headlines.

Recent podcasts:

- 255: US Election Special. Is a win for Harris a win for climate?
- 250: Why collective trauma is keeping us stuck on climate?
- 248: Cheaper, faster, better: how we'll win the climate war.

**Sustainababble: Comedy, Nature, Climate Change**

A weekly comedy podcast about the environment

Sustainababble aired its last podcast on 24/12/22. However, there are some really interesting archive episodes on onshore wind, heat pumps and more. Plenty of Chris Packham too!

**The Nature Podcast**

The podcast of leading scientific journal, Nature.

Recent podcasts:

- 07/08/24: Where weird plants thrive: aridity spurs diversity of traits
- 31/07/24: How light-based computers could cut AI's energy needs
- 17/07/24: The plastic that biodegrades in your home compost

## Instagram

**@unep**: official account of the United Nations Environment Programme.

**@environment**: all things climate and culture.

**@intersectionalenvironmentalist**: trending topics with a political edge.

## Books and more

**Silent Spring (Rachel Carson)**

Voted one of 25 greatest science books of all time, Rachel Carson's 'Silent Springs', published in 1962, is one of the first mainstream books to focus on environmental science. It documented the environmental harm caused by the indiscriminate use of the pesticide, DDT. It was one of the first publications to accuse the chemical industry of disinformation.

**The Gaia Hypothesis (James Lovelock/Lynn Margulis)**

Named after the Greek goddess of Earth, the Gaia Hypothesis, introduced in 1972, puts forward the idea that the Earth and its life forms work together as a single self-regulating system that maintains the conditions for life on the planet.

Although not universally accepted by the scientific community, the Gaia Hypothesis provides an interesting entry into discussions about climate change and species survival.

**An Inconvenient Truth (Al Gore/Davis Guggenheim)**

Premiering in 2006, 'An Inconvenient Truth' documents former US vice-president Al Gore's campaign to educate people about global warming. The documentary was both a critical and commercial success, winning two Academy Awards (Oscars).

# TAKE THE QUIZ, TEST YOUR GREEN KNOWLEDGE!

- 1. HOW MUCH LONGER DO ORCAS (KILLER WHALES) LIVE IN THE WILD THAN IN AQUARIUMS?**  
A: The same length of time  
B: Two years  
C: Ten years  
D: Twenty-five years
- 2. ONLY AROUND 55% OF SINGLE-USE PLASTIC BOTTLES ARE RECYCLED IN THE UK. HOW MANY BOTTLES ARE USED IN THE UK ON A DAILY BASIS:**  
A: 10 million  
B: 36 million  
C: 100 million  
D: Nobody really knows
- 3. WHAT % OF THE WORLD'S CARBON FOOTPRINT IN 2019 WAS ATTRIBUTED TO EMAILS?**  
A: Too small to measure  
B: 0.00007%  
C: 0.3%  
D: 5%
- 4. TRUE OR FALSE; SENDING AND RECEIVING AN EMAIL ON A MOBILE PHONE HAS A LOWER CARBON FOOTPRINT THAN A LAPTOP?**  
A: True  
B: False
- 5. HOW MANY UN SUSTAINABLE DEVELOPMENT GOALS ARE THERE?**  
A: 17  
B: 11  
C: 3  
D: 1
- 6. ABOUT 71% OF THE EARTH IS COVERED WITH WATER. IN %, HOW MUCH OF THE WATER IS FRESH WATER?**  
A: 2.5%  
B: 5%  
C: 7.5%  
D: 10%
- 7. LED LIGHTING USES 75% LESS ENERGY THAN TRADITIONAL INCANDESCENT BULBS. ON AVERAGE, HOW MUCH LONGER DOES LED LIGHTING LAST THAN INCANDESCENT?**  
A: 5 times longer  
B: 12 times longer  
C: 20 times longer  
D: 25 times longer
- 8. HOW MANY CIGARETTE BUTTS ARE LITTERED IN THE UK EACH YEAR?**  
A: 134 million  
B: 7.3 billion  
C: 27 billion  
D: 100 billion
- 9. RECYCLING A SINGLE 330ML ALUMINIUM DRINKS CAN SAVED ENOUGH ENERGY TO POWER A TV FOR HOW LONG?**  
A: 24 hours  
B: 3 hours  
C: 30 minutes  
D: 2 minutes
- 10. WHAT HAPPENED FOR THE FIRST TIME AT 1PM ON 7 JUNE 2017?**  
A: The UK decommissioned its first nuclear power station  
B: Offshore wind capacity passed onshore wind capacity  
C: Nord Stream 1 was commissioned  
D: Renewable energy supplied more than half of the UK's electricity.

# ANSWERS

- 10: You've bribed the editor... or you are the editor!  
9: Amazonballs, the planet is safe with you.  
8-7: Wowzer, you have serious green street cred.  
2-4: School green report could do better.  
5: Report to the headmaster... immediately!
- 1) D  
2) B  
3) C  
4) A  
5) A  
6) D  
7) D  
8) C  
9) B  
10) D





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