

Sustainability Report



Through our sustainability strategy we strive for continuous improvement across our 10 material sustainability topics, considering the impact of our business operations on the environment and key stakeholder groups, to support the long-term success and sustainability of the Company.”

Ian Farnworth

Group Environmental, Health and Safety Director



Long-term focus

We embed long-term thinking and action across our business operations and in our interactions with our stakeholders, in order to create sustainable value for all our stakeholders as we engineer a more efficient, safer and sustainable world.

Membership, engagement and reporting

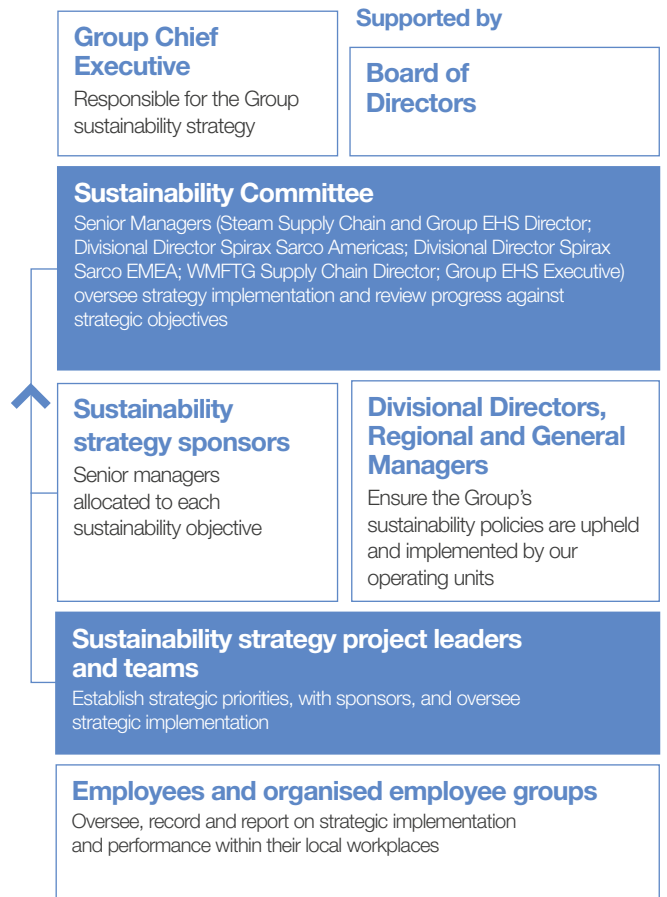
In 2019 our Group Sustainability Committee comprised: Ian Farnworth (Steam Supply Chain and Group EHS Director); Sheldon Banks (Divisional Director, Spirax Sarco Americas); Sean Clay (Divisional Director, Spirax Sarco EMEA); James Wright (Watson-Marlow Supply Chain Director); and Mark Wyatt (Group EHS Executive).

The Sustainability Committee engages a wide range of senior managers, project leaders and employees as part of its responsibility to oversee strategy implementation and review progress against strategic objectives. The Committee meets regularly throughout the year and receives presentations from project leaders at each session.

Progress against the Group’s sustainability objectives is reported to the Group Chief Executive, Group Executive Committee and Board of Directors.

Managing sustainability

We have a well-defined management structure to help us achieve our sustainability objectives.



Sustainability Report *continued*

Progress in 2019

Key areas of focus for 2019 were: increasing our employee's knowledge and understanding of sustainability, through the roll-out of the "Group Essentials" training programme; the continued adoption and integration of recent acquisitions into the Group's sustainability programmes; and progress against the Group's sustainability targets. We are pleased to have achieved progress in our areas of focus during 2019.

During 2019 we translated the course materials of our Group Essentials training programme into 15 languages and rolled these out across the Group. To date, over 5,300 employees have completed the programme's anti-bribery and corruption (ABC) training and 2,800 have completed all courses. Both Gestra and Chromalox have continued their adoption and implementation of the Sustainability Strategy and we made progress against most of our sustainability targets, which are outlined on page 61.

Focus for 2020

- Increase the number of employees who have completed the Group Essentials programme.
- Consider including the adoption of Group Essentials as an area of review within the Group's internal audit programme.
- Continue the integration of recent acquisition, Thermocoax, into the Group's sustainability programmes.
- Make progress against the Group's sustainability targets.



Spirax-Sarco Engineering plc is a constituent of the FTSE4Good UK Index

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Non-financial information statement

This Annual Report contains the information required to comply with the Companies, Partnerships and Groups (and Non-Financial Reporting) Regulations 2016, as contained in sections 414CA and 414CB of the Companies Act 2006. The table below provides key references to information that, taken together, comprises the Non-Financial Information Statement for 2019.*

Reporting requirement	Group Policies that guide our approach	Information and risk management, with page references
Environmental matters	<ul style="list-style-type: none"> • Group Environmental, Health, Safety, Energy and Sustainability Policy • Group Management Code • Supplier Sustainability Code 	Sustainability Report, pages 67-70 Principal risks, pages 21-22 and 99 Our business model, pages 8-17 Section 172 Statement, pages 80-81 Company purpose, page 1
Employees	<ul style="list-style-type: none"> • Group Diversity and Inclusion Policy • Group Management Code • Group Human Rights Policy • Group Environmental, Health, Safety, Energy and Sustainability Policy 	Sustainability Report, pages 62-64 Our business model, pages 8-11 Principal risks, page 24 Employee Engagement Committee Report, pages 82-84 Section 172 Statement, page 80-81 Company purpose, page 1
Social matters	<ul style="list-style-type: none"> • Group Human Rights Policy • Group Charitable Donations Policy • Group Employee Volunteering Policy • Supplier Sustainability Code 	Sustainability Report, pages 64-65 and 71 Our business model, page 8-11 Strategic Review, page 40 Section 172 Statement, page 80-81 Company purpose, page 1
Respect for human rights	<ul style="list-style-type: none"> • Group Human Rights Policy • Group Sanctions, Embargoes and Restrictions Policy • Supplier Sustainability Code 	Sustainability Report, pages 64-65 Principal risks, page 24
Anti-corruption and anti-bribery matters	<ul style="list-style-type: none"> • Group Anti-Bribery and Corruption Policy • Group Gifts, Entertainment and Hospitality Policy • Group Competition Law Compliance Policy • Group Sanctions, Embargoes and Restrictions Policy • Group Whistle-Blowing Policy • Supplier Sustainability Code 	Sustainability Report, page 64 Principal risks, page 24 Risk Management Committee Report, page 99
Description of the business model		Our business model, pages 8-17
Description of the principal risks in relation to the above matters, including business relationships, products and services likely to affect those areas of risk, and how the company manages the risks		Risk management and principal risks, pages 20-25 Risk Management Committee Report, pages 98-101
Non-financial key performance indicators		Sustainability Report, pages 62-71 Key Performance Indicators, page 27

* The policies listed above can be found on our website: www.spiraxsarcoengineering.com/our-approach/corporate-governance/governance-documents. Compliance with our policies is monitored through the implementation of our Sustainability Strategy and, locally, by our General Managers.

Our sustainability vision:

To engineer a more sustainable future.






**Our sustainability mission:**

We will operate sustainably through responsibly managing our business for on-going financial success; operating in accordance with laws and regulations; managing our social and environmental impacts; acting ethically; and managing our customer and supplier relationships, to improve the sustainability of their operations.

**Our sustainability objectives:**

We commit to engineering a sustainable future by focusing on five core areas, setting objectives and targets in each.

**Sustainability overview 2019**

Sustainability area	Material sustainability topic	Objective	Target	Further reading
Our workplaces 	Health & Safety	To achieve Health and Safety (H&S) excellence through engagement, empowerment and fostering good behaviours while targeting zero accidents.	Zero accidents	Page 62
	Employment practices	To promote diversity and equality through employment practices that are free from discrimination and in accordance with international human rights principles.	33% of women on our Board, as opportunities arise	Page 63
	Ethical business practices	To act in accordance with our Values, upholding a zero tolerance approach to bribery and corruption.	Zero incidents of bribery and corruption	Page 64
	People development	To invest in developing the knowledge and skills of our people.	Increase the impact of our technical and leadership training offering	Page 64
Our supply chain 	End-to-end supply chain	To focus on continuous improvement in our supply chain with particular emphasis on sustainability.	84% of phase 3 supplies to have signed our supplier sustainability code by the end of 2019	Page 65
	Product responsibility	To incorporate sustainability factors into our product design process, including energy efficiency, emissions, serviceability, recyclability and the availability of compliant and ethically sourced materials.	Continuing compliance with all applicable EHS standards, while meeting customer expectations of performance and cost	Page 66
Our environment 	Water and waste	To limit the environmental impacts of our operations through reducing water use and minimising and managing effluent and waste.	To reduce waste intensity by 10% and water intensity by 5% over three years to 2021	Page 67
	Energy and carbon	To minimise the environmental impacts of our operations by managing energy consumption with the aim of reducing carbon emissions.	To reduce our energy intensity by 10% over three years to 2021, with an accompanying reduction in carbon emissions	Pages 68-69
Our customers 	Customers	To provide products and services that improve the sustainability of our customers' operations through helping them reduce their environmental impacts, improve plant efficiency and productivity and maintain product quality.	n/a	Page 70
Our communities 	Community engagement	To engage positively with the communities in which we operate and to offer financial support to approved charities.	All Group companies to participate in at least one community engagement activity annually by 2020	Page 71

Sustainability Report *continued*

Our workplaces Health and Safety



Overview

We strive for Health and Safety (H&S) excellence and target zero accidents. As well as having robust management systems and safety controls to prevent accidents, we promote a strong H&S culture, with safety being one of our six Company Values. The Group Chief Executive and Board of Directors oversee our H&S programmes and performance, with H&S a standing agenda item at every Board meeting. All Group companies are expected to operate to the highest safety standards.

2019 performance and actions

Lagging indicators: lost time injury rate

During 2019, our over three-day lost time injury rate per 1,000 employees improved to 3.6 per 1,000 employees (2018: 4.9), a reduction from 36 injuries in 2018 to 28 in 2019. We also saw an improvement in our one to three-day lost time injury rate, which fell to 1.4 per 1,000 employees in 2019 (2018: 2.2), a reduction from 16 injuries in 2018 to 11 in 2019.

The 2018 increase in the over three-day lost time injury rate to 4.9 (2017: 4.6) was due to the full-year effect of the acquisition of Chromalox in 2017, which had less mature H&S practices than the rest of the Group. Since acquisition we have rolled out the Group's H&S programmes to Chromalox, invested in the business to reduce H&S risk and focused on increasing the H&S culture of the business. As a result, Chromalox's H&S performance improved in 2019.

Leading indicators: safety concerns and near miss reporting

Reflecting an increasingly well-embedded safety culture, the number of safety concerns raised by employees increased to 2,291 per 1,000 employees (2018: 1,954). The number of near misses reported also increased to 298 per 1,000 employees (2018: 195). All safety concerns and near misses were assessed and corrective action taken.

Leading indicators: safety training

During 2019, 134,341 H&S training units were delivered across the Group (2018: 87,671) and we established a new Group standard Behavioural Based Safety (BBS) programme. We delivered BBS training to our senior executive team and a number of General Managers. 14 EHS leaders completed a three day training event in the UK and at our global Group EHS conference 17 delegates received BBS training, to enable them to train our employees and drive a further improvement in our safety culture within the business. We established a quarterly safety competition in the steam business. We started the year with a safety message to all employees, to increase awareness of risk, empower employees to "stop the job" if they perceive any risk to themselves or their colleagues and reiterating the importance of reporting safety concerns and near misses.

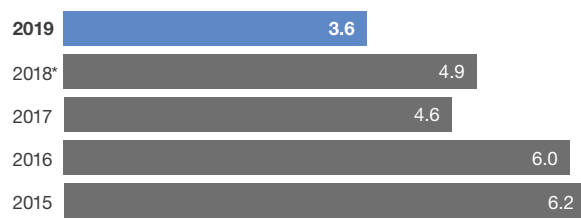
Safety management

During 2019, we increased the number of full-time qualified EHS professionals employed across the Group to 48 (2018: 39), improved the internal EHS audit scores at our steam supply sites and developed an EHS internal audit framework for our steam sales companies. We developed a Group Working at Height Policy and training, rolled out a Group Personal Protective Equipment standard and prepared a H&S integration plan for Thermocoax. We completed 1,978 EHS audits (2018: 2,446) and 2,428 inspections (2018: 1,599). 17 of our 32 manufacturing sites have OHSAS 18001 certification (2018: 15).

Notable achievements

Watson-Marlow MasoSine, Germany, celebrated 20 years without a lost-time accident and, for the second consecutive year, Spirax Sarco Ltd, UK, achieved a Royal Society for the Prevention of Accidents Gold award in recognition of the company's strong H&S management systems and culture.

Over three-day lost time injury rate per 1,000 employees



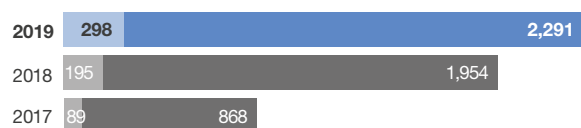
* 2018 rate increased due to the full-year effect of the Chromalox acquisition

One to three-day lost time injury rate per 1,000 employees



* 2018 rate increased due to the full-year effect of the Chromalox acquisition

Near misses and employee H&S concerns raised per 1,000 employees



■ Near misses per 1,000 employees
■ Employees H&S concerns per 1,000 employees

Reporting metrics

We have refreshed our external reporting metrics to reflect our more challenging internal metrics. This has expanded the scope of the data from work-related lost time accidents – as defined by the UK's Health and Safety Executive's Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR) – to all lost time injuries experienced by our employees while working, regardless of cause. Most notably, injuries caused by car accidents, which were excluded under the RIDDOR definition, are now included in the data. We have also chosen to report one to three-day lost time injuries, reflecting the increasing maturity of our Health and Safety programmes, as well as two important leading indicators.

Focus for 2020

- Implement our BBS programme in Watson-Marlow UK.
- Roll out the EHS internal audit framework to sales companies in the Steam Specialties business.
- Align Thermocoax to Group EHS standards/programmes
- Establish new Group First Aid and Manual Handling Policies and increase the number of trained first aiders.

Our workplaces *continued* Our people



Overview

Our Values, in particular Respect and Integrity, underpin our HR policies and employment practices. We are committed to creating a culture in which our employees feel safe to challenge and are encouraged to do so. We have robust HR policies and systems that support us in protecting the rights of our employees and ensure their fair and equitable treatment.

Employee engagement

We communicate with employees to ensure that they have an understanding of the operations and performance of their company locally and the Group. Every two years we conduct an employee survey to provide a confidential forum for all employees globally to tell us how they feel about working for Spirax-Sarco Engineering. Following each employee survey we undertake extensive work to put local actions plans in place to demonstrate a commitment to acting on the feedback from our employees. We also have well-established grievance and whistle-blowing procedures to enable employees to confidentially raise concerns.

The creation, in 2019, of the Employee Engagement Committee has achieved greater Board engagement with the workforce, enabling the Board to gauge and monitor our culture and to ensure it is both embedded and retained in our Company. The Employee Engagement Committee Report can be found on pages 82 to 84.

Workforce diversity

We believe that diversity of culture, gender, age, experience and expertise enhance our ability to operate effectively and ethically, whilst increasing the sustainability of our business. Our recruitment policies ensure decisions are fair and made without bias, and our remuneration policies are designed to recognise skills, experience and achievement.

We seek to increase diversity at all levels of the organisation, with a particular focus on gender diversity. Our Diversity and Inclusion Policy outlines, amongst other things, our commitment to provide equality, fairness and respect for all employees, regardless of background; to oppose all forms of unlawful discrimination; and to operate in accordance with the Equality Act 2010, avoiding discriminating on the basis of any protected characteristics.

2019 Performance and actions

We remain committed to increasing gender diversity across the business and contributed to the FTSE Women Leaders (Hampton-Alexander) Review. During 2019, we appointed Caroline Johnstone as a Non-Executive Director, increasing female representation on our Board from 22% to 30%. At the time of publication, following the retirement of Jay Whalen on 31st December 2019, female Board membership is 33%. At the end of 2019, 20% of the Executive Committee and their Direct Reports were female, an increase from 18% last year.

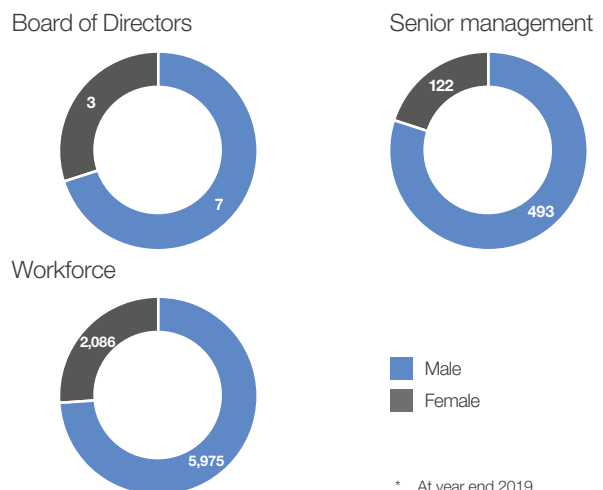
We formalised our commitment to ensuring more diverse shortlists for external recruitment and have asked the Human Resources managers of our operating companies not to accept shortlists from recruiters that do not include at least one strong female candidate.

2019 was the first full year of our Executive Mentoring Programme, designed to accelerate the development of high-potential women and strengthen the pipeline of female talent. Across the Group, 20 of our women leaders were paired with an executive mentor for one year. Notable success achieved by these women during the year include: Teeny Parwongphol, who was promoted from General Manager of Spirax Sarco Thailand to Regional General Manager of Thailand and South East Asia Developing Markets; Jo Weekes, who was promoted from General Manager of Watson-Marlow Ireland to Regional Sales Manager – Northern Europe; Dilsad Baysan, who was promoted from National Sales Manager in Spirax Sarco Turkey to General Manager of Spirax Sarco Turkey; Natalia Voropaeva, who was promoted from Spirax Sarco Central and Eastern Europe Regional Business Development Manager to Steam Specialties EMEA Business Development Manager, and Sarah Peers, Head of Group Corporate Communications, who received a prestigious WeQual Award, which recognises leadership potential in women one level below the Executive Committee.

In December 2019, we commenced a pilot to establish a Group-wide Women's Network. Approximately 30 women from different levels of the organisation, and across a variety of roles, were invited to participate in the pilot. Development of the Women's Network will continue in 2020.

During 2019, our workforce gender diversity improved across the workforce as a whole with 26% of our employees being female and 74% male (2018: 22% female, 78% male). Disappointingly, senior manager diversity declined slightly with 20% female and 80% male (2018: 21% female, 79% male). We recognise that there is still more to do to address gender imbalance and will continue to implement further programmes and initiatives in 2020.

Gender diversity 2019*



Focus for 2020

- Inclusive leadership training to be delivered to senior managers across the Group.
- Starting salary analysis to be undertaken to further limit the gender pay gap throughout the business.
- Increased focus on internal communications to continuously improve employee engagement and collaboration across the Group.

Sustainability Report *continued*

Our workplaces *continued* Ethical business practices



Overview

With the implementation of our refreshed Company Values across the Group in 2018, and on-going training and communication regarding sustainable and ethical business practices, we continue to ensure that we are creating and maintaining a culture of ethical behaviour throughout our global operations.

2019 Performance and actions

Continued expansion of ABC training

In keeping with the growing employee base and geographic reach of the Group's businesses, in 2019 we significantly expanded the scope of our internal anti-bribery and corruption (ABC) training. This increased scope, which commenced in late 2018, was completed in 2019 with the final roll-out of the new course to every employee with an email address, including our new colleagues within the Thermocoax business. More than 5,300 employees (at all levels within the business) have now completed the course, three times the number of employees who had completed it at the end of 2018.

The new course, which is part of a broader "Group Essentials" training programme, is available in 16 languages, ensuring that our high expectations for ethical business practices are understood across all our Group companies worldwide.

Whistle-blowing

Every employee has access to a local, independent, third-party whistle-blowing hotline, hosted by Safecall, where they can speak to an external party in their own language to raise concerns about potentially unethical behaviour within the business. Following the completion of the Thermocoax acquisition in May 2019, materials advertising the Safecall hotline were made available at each Thermocoax site. The internal audit function confirms that the Safecall information is appropriately displayed at every Group site.

In 2019, 13 calls were made to the Group's Safecall hotline. Each of these were investigated by senior management and follow-up actions taken, where necessary. Summaries of all calls and related actions are reviewed by the Audit Committee and the Board.

Company Values

We continue to embed our Company Values (customer focus, excellence, respect, integrity, safety and collaboration) through a number of initiatives to ensure they are constantly visible in our everyday work. For example, during 2019 Chromalox's HR team ran a Values in Action campaign, which publicly recognised 35 employees for "living the Values" in their daily work.

Focus for 2020

- Update content of ABC training to ensure it remains relevant and current.
- Continue to monitor compliance with internal whistle-blowing hotline publication requirements, via internal audit.

Our workplaces *continued* People development



Overview

People development is an essential enabler of business sustainability. As we invest in our people, we are better able to serve our customers and engineer sustainable value for all our stakeholders.

2019 Performance and actions

During 2019 we invested in training and development initiatives across the Group, expanded our technical development programmes and rolled out Group-wide induction training.

Graduate development

We recruited 23 graduates onto our Global Graduate Development Programme, in 11 countries, hiring graduates in Korea, Singapore, India and Brazil for the first time. The total number of graduates currently on the two-year programme is 42, across 14 countries, with slightly over 50% being female. We held our first global graduate training conference in June, attended by all current graduates and some past-programme participants, and launched an online learning portal designed specifically for our graduates. The success of the Graduate Programme in accelerating career progression can be seen in the promotion of a former Graduate Programme participant, Lukas Grech (2013-15), to the position of General Manager of New Zealand, effective from 1st January 2020.

Leadership development

We expanded our LEAP leadership development programme, running three cohorts: one in EMEA, one in the Americas and one in Asia Pacific. The programme is delivering good results for the business, which was recognised when we won the "Best Commercial Programme" in the Training Journal Awards 2019. We actively promote diverse participation in LEAP, with the 88 attendees, to date, drawn from across all our Group businesses, from 28 countries, and with 27% of participants being women.

Watson-Marlow also continued to invest in their strategy-focused ASPIRE programme, with 31 leaders attending from across the business in 2019. A number of our senior leaders attended Executive education programmes at the London Business School, Harvard Business School, the Centre for Creative Leadership and Ashridge Business School.

Sales Management capability

During the second half of the year we launched an initiative to develop our Sales Management capability. We developed a Sales Management framework, as well as a competency assessment. Work has commenced to build a development programme for Sales Managers, which will be launched in 2020. Using the framework as a foundation, work has commenced on building a development programme for Sales Managers, which will be launched in 2020.

Focus for 2020

- Strengthen our Graduate Development programme.
- Continue to roll out our Leadership Development programmes.
- Launch a Sales Management development programme.

Our supply chain

End-to-end supply chain



Overview

We operate 32 manufacturing sites globally. By manufacturing close to the point of sale we shorten lead times, manufacture to local specifications, reduce transportation requirements for finished goods, provide local employment, improve customer service and strengthen our competitive advantage. We continuously seek to improve the sustainability of our end-to-end supply chain and focus on sourcing materials ethically, manufacturing responsibly and distributing efficiently, with the aim of providing high levels of customer service while managing our social and environmental impacts.

Supplier Sustainability Code

Our Supplier Sustainability Code (Code) is central to our commitment to ethical and sustainable sourcing. The Code outlines the expectations that we have for suppliers and enables us to embed sustainability into our purchasing processes. The requirements of the Code fall within four broad categories:

- **Ethics:** suppliers are required to comply with all applicable trade laws and regulations and commit to international ethical business conventions, including compliance with competition laws, the rejection of bribery and corruption, a commitment to trace the origin of materials, the maintenance of records to demonstrate compliance with regulations, and the use of anonymous grievance and whistle-blowing mechanisms.
- **Human Rights:** suppliers are expected to comply with international Human Rights conventions and, amongst other requirements, prohibit the use of child labour, eliminate discrimination in their employment practices, comply with laws regulating wages, working hours and working conditions, allow their employees freedom of association, and comply with the UK Modern Slavery Act and the US Dodd-Frank Act.
- **Health & Safety (H&S):** suppliers must operate a safe working environment, with a suitable H&S policy and management system, and the products produced by suppliers must comply with all applicable environmental, health and safety regulations.
- **Environmental Sustainability:** suppliers should implement initiatives that contribute to the preservation of the environment and mitigate their impact on natural resources, complying with all legal environmental requirements and demonstrate continuous improvement in environmental performance.

2019 Performance and actions

Supplier Sustainability Code roll-out

During 2016 and 2017 we commenced the Phase 1 and 2 roll-outs of the Code to direct suppliers of our Spirax Sarco and Watson-Marlow manufacturing and sales companies. By the end of 2019, 99% of Phase 1 and 2 suppliers had signed the Code (2018: 97%). In 2018, we commenced a Phase 3 roll-out of the Code to suppliers of recently acquired businesses Hiter Controls, Aflex Hose, Gestra and Chromalox. By the end of 2018, just over 50% of suppliers had signed the Code. Our 2019 target was for 84% of Phase 3 suppliers to have signed the Code, we achieved our target. We continue to work with suppliers on a continuous improvement basis to further raise standards within our supply

chain. Our new combined Phase 1, 2 and 3 target is for 97% of suppliers to have signed the Code by the end of 2020.

Having acquired Thermocoax in 2019, we commenced a Phase 4 roll-out of the Code. Our Phase 4 target is for over 90% of suppliers to have signed the Code by the end of 2020.

During 2019 we exited seven suppliers who would not sign the Code, or whose standards fell short of those we require.

Supply chain sustainability initiative example

During 2019, Chromalox undertook a number of initiatives to improve the sustainability of its supply chain. One key activity was a detailed supplier analysis, using a range of categories. Following the analysis, several strategically important suppliers were identified as being in need of improvement and strategies were designed and deployed to work with those suppliers on a continuous improvement basis. Another project was undertaken to improve transportation efficiency for goods to and from the company's manufacturing plant in Mexico. As a result of the project, efficiency was increased, overall transportation costs were reduced and a number of new jobs were created for local employees in Mexico.

Product Lifecycle Management

Within the Steam Specialties business, we are benefiting from our enhanced Product Lifecycle Management (PLM) tool and the data that it provides. It is enabling us to more effectively monitor supplier quality, allowing us to identify and rectify supplier quality issues quickly, reducing the need for re-working parts as well as reducing scrap.

For example, during 2019 Spirax Sarco Mexico utilised PLM to identify its three lowest performing suppliers, by product quality. It found that one supplier accounted for 76% of rejected parts. Of those rejected parts, 81% related to just one sand-cast product, with 99% of the rejections due to small holes in the metal. The supplier and our Quality Assurance team identified a problem with the design of the casting that was causing small gas bubbles to be trapped. By modifying the template used to cast the part, the molten metal was able to flow more freely, preventing gas bubbles from being trapped, which resolved the issue.

Modern Slavery Statement

Spirax-Sarco Engineering plc prides itself on setting high standards for sustainable and ethical business practices in its operations worldwide. Included in those high standards is a commitment to respecting and protecting the human rights of all individuals and combating all forms of modern slavery or human trafficking in all parts of our business organisation, including our supply chain. We are continuously developing and improving our business practices and policies in line with that commitment. We support a strong, collective stand to identify, prevent and raise awareness of modern slavery and human trafficking practices in all parts of the world.

Further reading

Read our Modern Slavery Statement in full or view our Supplier Sustainability Code on our website.

www.spiraxsarcoengineering.com/sustainability/supply-chain

Focus for 2020

- Achieve progress against our targets and exit any suppliers found to fall short of required standards.
- Review our method for monitoring supplier sustainability.

Sustainability Report *continued*

Our supply chain *continued* Product responsibility



Overview

To achieve our Company purpose of engineering a more efficient, safer and sustainable world, we design, manufacture and supply an industry-leading range of quality products to customers that are reliable, safe to use, ethically-produced and environmentally sound throughout their lifecycle.

Across five principal Research and Development (R&D) centres, in the UK (Spirax Sarco and Watson-Marlow), Germany (Gestra), the USA (Chromalox) and France (Thermocoax), we develop new products to meet our customers' changing needs, and enhance existing products. Extensive on-site analysis, test and validation capabilities, as well as the use of third-party certification, ensure that our customers can buy from us with confidence.

2019 Performance and actions

Management changes

Our product responsibility topic came under new day-to-day management, following the development of new Business Development and R&D organisational structures within the Steam Specialties business. As a result of the changes, limited progress was made against our 2019 objectives as the new project manager focused on refining the topic's overall objectives.

Two broad areas of focus going forward are, firstly, to build on the Eco-Design Policy that we already have to better incorporate sustainability factors into our product design and lifecycle process and, secondly, to improve the internal mechanisms used for measuring, monitoring and reporting on product sustainability.

Knowledge management

We continued to develop the use of quality data, including manufacturing reworking analysis, to evaluate the new product development process, with the aim of reducing energy use and scrap rates during manufacturing. This data is being continuously fed back into the development process to ensure that lessons are learned and changes implemented to maximise manufacturing efficiency for new products that we develop.

Product development

Across the Group we continued to develop new products that will help our customers to improve the sustainability of their industrial processes. More information about some of the new products launched by our businesses in 2019 can be found on page 38.

Focus for 2020

- Complete a Group-wide review of R&D design practices and principles and facilitate the sharing of best practice.
- Improve disclosure of sustainability information to customers.

Eco-design in action: Clean Steam Generator

Energy efficiency is at the heart of the design of Spirax Sarco's new Clean Steam Generator (CSG), for the Healthcare industry, launched in 2019. Design features include variable speed pumps to reduce electricity consumption, a compact heat exchanger to minimise heat loss, predictive maintenance algorithms to ensure peak efficiency is maintained throughout the life of the product and additional heat recovery options available to ensure maximum efficiency within a customer's application.

All materials used within the CSG are responsibly sourced, and maintainability is central to the design, with all product components repairable or replaceable, to extend the life of the CSG.

During the CSG's development phase, the engineering team undertook an environmental impact assessment and used the results of the assessment to inform the development of the product. During the validation phase we undertook extensive testing and optimisation of the design in our world class R&D facility in Cheltenham, UK, to ensure optimum performance, long-term reliability, compliance with clean steam standards and product safety (see images below).

The CSG is being manufactured in three global locations: Mexico, Italy and China, to reduce transportation requirements, maximise local sourcing of materials, and ensure compliance with regulatory requirements in the three regions, while supporting economies of scale.



Further reading

To find out more about the Clean Steam Generator, see the strategy in action case study.

[See page 35](#)

Our environment

Water and waste



Overview

Fresh water is a scarce resource in many areas of the world. As a result, we aim to use water efficiently across all our global operations, monitoring use, controlling leakage, reducing effluent and acting to reduce total consumption. Through the products, solutions and services we supply to customers, we also help them to do the same.

Wherever we operate we ensure full compliance with waste regulations. For example, waste is segregated and stored safely, with certified waste vendors appointed to handle and responsibly dispose of waste. Any hazardous waste, such as paint residues, chemical waste from cleaning and degreasing processes, electronic waste and printer toner cartridges, are removed from our sites by licenced contractors who responsibly recover or dispose of waste. We proactively seek to reduce waste generation across our global operations and across our sites we utilise monitoring and management systems to ensure compliance with environmental regulations, such as the control of pollution and air emissions.

2019 Performance and actions

Water use

In 2019, our global operations (excluding Thermocoax) used 212,027m³ of water (2018: 211,540m³), a 0.2% increase. On an intensity basis, water use fell by 2% to 174.6m³ per £m of inflation adjusted sales (2018: 178.8m³), demonstrating progress towards our 5% reduction target, 2019- 2021.

Total water use m³



Water intensity m³ of water per £m of inflation adjusted sales at constant currency



Water management

During 2019, we focused on improving the quality of our global water consumption data, utilising the global sustainability accounting software that we purchased and rolled out in 2018. We now have a complete data set from across the Group (excluding Thermocoax) in 2019.

Across many of our sites we made good progress in reducing water use, which is partially masked in the reported results by the more complete data set in 2019. Examples of activities undertaken in 2019 to more effectively manage water use include the installation of automated remote water metering with internet reporting across our sites in Cheltenham, UK and participation in a district waste water recovery project that uses grey water for garden irrigation by Spirax Sarco India.

Waste

In 2019, our global operations (excluding Thermocoax) generated 5,389 tonnes of waste (2018: 5,843), an 8% reduction over the prior year. On an intensity basis, waste generation fell by 10% from 4.9 tonnes per £m of inflation adjusted turnover in 2018 to 4.4 tonnes in 2019. The 2018 data has been restated to correct errors that resulted in the overstating of waste generation at two sites. The strong progress in 2019 saw us achieve our three year waste intensity reduction target. Our target will remain in place for 2020 to ensure that the sites that have met the 10% reduction target maintain it and the rest continue to make progress towards it.

Total waste generation tonnes



Waste intensity tonnes of waste per £m of inflation adjusted sales at constant currency



In addition to reducing the total amount of waste generated, we reduced the amount of waste sent to landfill in 2019 by increasing the volume of waste recycled and improving the recovery of materials for reuse. During 2019, globally, 79% of our waste was recovered, recycled or used to generate energy.

Waste management

During 2019, we improved monitoring and reporting of waste data, especially in our operations outside of Europe. In a small number of locations we changed our waste contractors to suppliers that are able to provide data with greater accuracy.

Examples of waste reduction initiatives undertaken in 2019 include, improvements to Spirax Sarco Argentina's waste metals recovery programme; improved waste segregation and recycling at Chromalox Tennessee; new waste water storage containers in Chromalox France and Utah; and the introduction of a new waste contractor in Watson-Marlow Alitea (Sweden) that allows Alitea to donate money raised by recycling to charity. Spirax Sarco Argentina also joined an industrial sustainability forum in 2019, with 10 other industrial companies, which aims to facilitate learning and the sharing of best practice on key environmental sustainability topics such as water, waste and energy management.

Focus for 2020

- Implement locally-identified initiatives to reduce water use, such as improved monitoring and metering, water-efficient fixings and promoting behavioural change.
- Include Thermocoax's water and waste data in the Group results.
- Increase the re-use of packaging materials and identify alternatives for non-recyclable materials.

Sustainability Report *continued*

Our environment *continued* Energy and carbon



Overview

Climate change is a global challenge and an emerging risk to businesses, people and the environment across the world. We have a role to play in limiting warming by improving our energy management, reducing our carbon emissions and helping our customers to do the same.

2019 Performance and actions

Greenhouse gas emissions performance

Our CO₂e 2019 emissions data have been audited by TÜV UK Ltd, which has provided limited assurance as follows:

“TÜV UK Ltd is acting as the independent verifier of the carbon footprint of Spirax Sarco. Based on our checks and reviews, taking into consideration a materiality level of 5% and a limited level of assurance we have found no evidence suggesting that the calculated greenhouse gas emissions are materially misstated and, hence, they are not an unreasonable assertion of the greenhouse gas-related data and information. Further, no facts became evident, which led us to the assumption that the calculation was not carried out in accordance with the applied international norm for the quantification, monitoring and reporting of GHG emissions (GHG-Protocol). The emissions for the reporting period 1st January 2019 to 31st December 2019 (inclusive) are: 23,878 tCO₂e for Scope 1 and 19,497 tCO₂e for Scope 2.

TÜV UK Ltd, London, February 2020”

The increase in CO₂e emissions reflects the growth of our business and an increased manufacturing output, set against emission reductions elsewhere across the Group. In 2019, 24% of our CO₂e emissions were generated in the UK. On an intensity basis, our emissions increased by 1% in 2019. Since 2013, our benchmark year, we have reduced our emissions intensity by 20%.

Energy performance

Group energy use increased by 6% in 2019, for the reasons outlined above, with a 4% increase on an intensity basis. We were disappointed not to have made progress against our energy and CO₂e emissions targets in 2019 and will look to return our energy and emissions intensity to a positive downward trend in 2020.

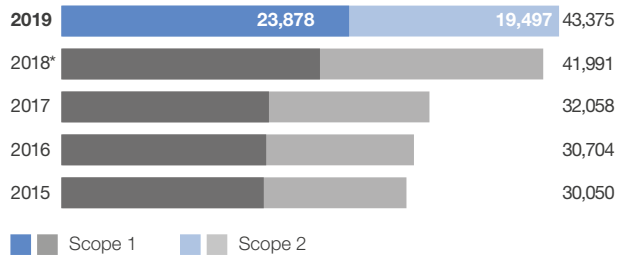
Energy management

In 2019 we were pleased to achieve a Carbon Disclosure Project score of B, placing us in the “Management” band of global companies, demonstrating that we are taking coordinated action on climate change.

All Group companies are responsible for identifying energy saving opportunities through EHS audits and “treasure hunts”, and implementing them locally. A wide range of initiatives were undertaken during 2019. For example, Watson-Marlow Bredel (Netherlands) replaced the roof in its assembly hall and installed a more effective insulation system; Chromalox China, converted to LED lighting; Chromalox Tennessee, Spirax Sarco France and Spirax Sarco USA, upgraded their compressed air systems to increase energy efficiency; Spirax Sarco UK optimised efficiency of its Combined Heat and Power plant, with 95% of electricity now

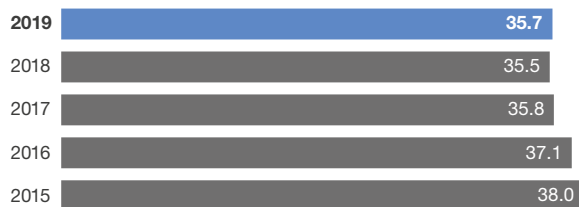
self-generated on site; Spirax Sarco China, Spirax Sarco USA and Spirax Sarco Argentina replaced or improved their steam boilers; and Spirax Sarco USA became our seventh company to be certified to energy management standard ISO 50001.

Total Group CO₂e emissions (scope 1 and 2) tonnes

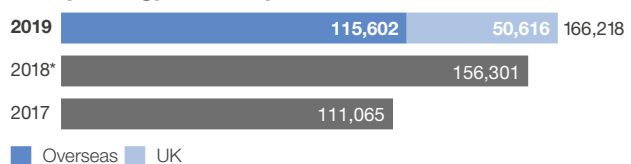


* The increase was due to the acquisition of Gestra and Chromalox, whose emissions were included for the first time in 2018.

CO₂e intensity tonnes per £m of inflation adjusted sales, at constant currency



Group energy consumption MWh



* The increase was due to the acquisition of Gestra and Chromalox, whose energy use was included for the first time in 2018.

Energy intensity MWh per £m of inflation adjusted sales, at constant currency



Methodology

We employ an “operational control” definition to outline our carbon footprint boundary. Included within that boundary are manufacturing facilities, administrative and sales offices where we have authority to implement our operating policies. For each of these entities we have measured and reported on our relevant Scope 1 and Scope 2 emissions. (Scope 1 refers to direct emissions from sources owned or controlled by the Company; Scope 2 refers to indirect emissions resulting from the purchase of energy generated off site, including electricity.) Excluded from our footprint boundary are emission sources from operating companies established or acquired during 2019. We have used the GHG Protocol Corporate Accounting and Reporting Standard and emission factors from the UK Government’s GHG Conversion Factors for Company Reporting 2018 and 2019, data from The International Energy Agency 2018 and 2019, ISO 140064-1, and regionally specific Environmental Reporting Guidelines to calculate our total CO₂e emissions figures. In the interest of transparency and accuracy our total CO₂e emissions for 2018 have been re-stated from 40,009 tonnes to 41,991 tonnes CO₂e, following checks and revisions of reported fuel use, final invoicing and adjustments of estimates. This adjustment has also resulted in the restatement of our total energy use for 2018 from 155,947 MWh to 156,301 MWh. Our carbon and energy intensity metrics have, as a result, been recalculated for 2018.

Focus for 2020

- Develop a comprehensive, long-term strategic carbon roadmap.
- Develop and implement a Group Transportation Policy to reduce CO₂e emissions.
- Continue to implement energy saving initiatives.

Task Force on Climate-related Financial Disclosures (TCFD)

Governance

Describe the Board's oversight of climate-related risks and opportunities	<ul style="list-style-type: none"> Our Risk Management Committee, a principal committee of the Board, oversees the management of our climate-related risks and opportunities. Day-to-day management of the Group's climate change mitigation activities is overseen by the Group Sustainability Committee, utilising the management structure outlined on page 59.
Describe management's role in assessing and managing climate related risks and opportunities	<ul style="list-style-type: none"> The Board has collective responsibility for managing climate-related risks and opportunities. In particular, Neil Daws, Executive Director, supported by Andy Robson, Group General Counsel and Company Secretary, has specific delegated responsibility for overseeing climate related risks, mitigation activities and performance.

Strategy

Describe the climate-related risks and opportunities the organisation has identified over the short, medium and long-term	<ul style="list-style-type: none"> Short-term (0-5 years): customer carbon emission targets and increasing availability of green electricity could encourage a move towards electric heating solutions that have zero emissions at point of use. While an opportunity for the Electric Thermal Solutions business, some sales could be at risk in the Steam Specialties business for applications where steam or electric heating solutions are equally viable. Medium-term (5-10 years): growth in electric vehicles could cause a decline in the oil and gas industry, particularly refinery demand. Long-term (10+ years): large oil, coal and gas fired boilers could be replaced by banks of small electric generators reducing demand for boiler controls and boiler-house products. Increasing frequency of climate related extreme weather events.
Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy and financial planning	<ul style="list-style-type: none"> In the short to medium-term, growing awareness of climate change and customer sustainability targets will continue to provide an impetus for business growth as we provide products, services and solutions that increase efficiency and reduce customers' energy use and carbon emissions. To mitigate the risks outlined above, we initiated a strategic project to assess potential business impacts and opportunities. The outcome of the review will feed our R&D pipeline to ensure that we stay abreast of customers' changing requirements. Our broad geographical presence and global manufacturing footprint reduce the risk of disruption caused by an extreme weather event and we have appropriate insurance cover in place to mitigate the effects of such events. We direct our financial resources appropriately, for example investing in R&D and allocating capital to projects that increase our own energy efficiency and reduce our environmental impacts.
Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	<ul style="list-style-type: none"> Our company purpose is to create sustainable value for all our stakeholders as we engineer a more efficient, safer and sustainable world, and our business strategy supports this, with all three of our businesses offering significant environmental benefits to customers. With customers in almost all industries worldwide and across 130 countries our products are indispensable for the production of foods, beverages and medicines, the generation of power and the treatment of water and wastewater, and many other essential products. Furthermore, steam remains the world's most efficient heat transfer medium with multiple on-site applications. We thus have a highly resilient business and business strategy that will remain relevant across different climate-related scenarios. However, we are not complacent and recognise that we will need to continue to develop and adapt, ensuring that our product offering continues to evolve to meet customer needs now and in the future.

Risk management

Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management	<ul style="list-style-type: none"> Each year the Group engages in a top-down and bottom-up risk review and feeds its results to the Risk Management Committee. This includes sustainability/climate-related risks. The Risk Management Committee assesses the climate-related risks identified to understand their severity, identify controls or mitigation required and monitors such risks on its risk register.
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Metrics and targets

Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process	<ul style="list-style-type: none"> We report various consumption and intensity metrics relating to energy, CO₂e, waste and water in our Sustainability Report, as well as a customer carbon avoided metric. Please see pages 67 to 68 and 70.
Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks	<ul style="list-style-type: none"> Streamlined Energy and Carbon Reporting (SECR) disclosures can be found on page 68.
Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets	<ul style="list-style-type: none"> Our current three year target (2019-2021) is to reduce our energy and CO₂e emissions intensity by 10%. Please see page 68 for details of performance against these targets.

Sustainability Report *continued*

Customers



meeting customer needs. One area of focus for the roadmap is working with our strategic accounts management team to support customer energy saving programmes (audits, training and projects). We saw positive progress during 2019, with both delivery of customer sustainability benefits and related growth opportunities.

Overview

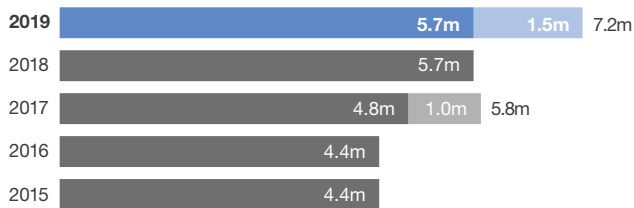
With growing concern globally over climate change and businesses increasingly recognising a need to lower their carbon emissions, use energy more efficiently, reduce waste and minimise their water consumption, we are uniquely placed to offer our customers a wide range of products, engineered solutions and services to help them reduce their environmental impacts and increase their operational sustainability.

2019 Performance and actions

Customer CO₂ emissions reduction

Using methodology that has been independently assessed with the assistance of Ricardo Energy & Environment, and taking revised emissions factors into account, we estimate that our customers will save 7.2 million tonnes of carbon emissions annually as a result of purchasing a select range of energy saving products from our Steam Specialties business in 2019. The calculation is based on a select range of products for which we can quantify energy savings with reasonable accuracy. Many other products will generate energy and carbon savings when used as part of an engineered solution that increases operating efficiency, but as the benefits are not easily quantifiable they are excluded from the methodology. The scope of the calculation was extended in 2019 to include the sale of products from Gestra, acquired in 2017, as well as the Spirax Sarco steam business.

Tonnes of CO₂e emissions our end users saved as a result of purchasing our energy management products*



- CO₂ savings from Spirax Sarco products
- CO₂ savings from Gestra products
- CO₂ savings from existing product range
- CO₂ savings from expanded product range

* 2015-2018 Spirax Sarco steam products only.

To put the savings into context, 7.2 million tonnes of carbon emissions is equivalent to the annual carbon sequestration of approximately 327 million mature trees or equates to removing approximately 3.7 million new cars from the roads annually.

Sustainability offering roadmap

In 2018 we developed a sustainability offering roadmap within the Steam Specialties business, which we have used and further developed in 2019. The roadmap captures how our products, solutions and service offerings support our customers with their sustainability journeys, as well as identifying future opportunities for

Thermocoax supports ground-breaking nuclear fusion project

In one of the most ambitious energy projects in the world, 35 nations are collaborating in the south of France to build the world's largest nuclear fusion reactor, which aims to become the first fusion device to produce net energy, proving the concept and preparing the way for commercial fusion power plants in the future.

Within the reactor magnetic interferences, a vacuum, radiation and extreme temperatures create exceptionally challenging conditions for relaying essential information from sensors. Even Thermocoax's robust mineral-insulated cable technology could not function effectively under such harsh conditions. Research demonstrated that by twisting the cable it was possible to overcome the interference, but this process damaged the cable sheathing. In response, Thermocoax developed a new technology that combined twisted conductor cables with a specifically formulated sheath that is able to consistently and reliably relay sensor signals within the reactor, despite the extreme conditions.

Widely regarded as the "holy grail" of power generation, nuclear fusion involves fusing hydrogen atoms in a controlled way, with the resulting reaction producing almost 4 million times more energy than burning fossil fuels and four times as much energy as nuclear fission, at equal mass. Nuclear fusion is environmentally safe and sustainable: the fuel sources are readily available in nature; the principal by-product of the process is helium – an inert, non-toxic gas; no radioactive waste is generated; no carbon emissions or greenhouse gases are released; and there is no risk of a chain reaction, leading to a nuclear "meltdown".

Thermocoax's technology is playing an essential role in this ground-breaking, and potentially environmentally revolutionary, project.

Further reading

Examples of how our products and services are engineering a more efficient, safer and sustainable world can be found on pages 12 to 17 and on our website. www.spiraxsarcoengineering.com/about-us/our-impact

Focus for 2020

- Enhance international collaboration to consistently support multinational companies with their sustainability programmes.
- Continue to strengthen the skills and expertise of our sales and service teams to identify customer sustainability improvement opportunities.
- Develop our customer sustainability reporting metrics.

Our communities

Community engagement



Overview

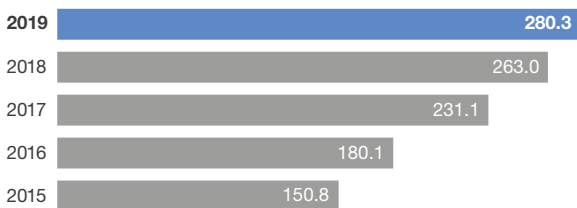
Wherever we operate, we seek to be a force for good. We commit to “Engineering better futures” for the people living in our communities through financial donations to registered charities; educational provision; in-kind donations of products, services or the use of company facilities; and company-supported employee volunteering. Our primary focus is education, particularly in the sciences and engineering, where we aim to raise awareness of technical careers and break down gender stereotypes that are limiting female participation in engineering. We also seek to respond to local needs, offer support to the underprivileged young, disadvantaged, disabled and elderly, and contribute to natural disaster relief.

2019 Performance and actions

Group Charitable Fund donations

During 2019, the Spirax Sarco Group Charitable Fund increased its donations by 7%, to £280,300. The Fund made donations varying in size from £300 to £50,000 to a wide variety of charities, including £6,000 to Young Gloucestershire, which supports disadvantaged young people in the county who are facing challenges in their lives; an £8,000 donation to Young Enterprise, a charity that empowers young people to develop their personal and business skills and make connections between school and the world of work; and £50,000 to Engineers Without Borders UK, a charity that seeks to inspire young engineers and embed global responsibility into engineering. In addition to supporting Engineers Without Borders UK financially, we are contributing to their valuable work through encouraging employee volunteering.

Group Charitable Fund donations £'000



Local community engagement activities

Nearly £160,000 was donated to charitable causes by our operating companies during the year. In-kind donations with an estimated value of £31,000 were donated and our employees contributed over 5,300 hours of working time to community engagement activities. Using an average hourly salary to estimate the cost to the company of employee volunteering, and including management costs, we estimate that the total value of our operating companies' community engagement activities in 2019 was approximately £320,000. In addition, our employees donated £55,000 of their own money and gave over 2,000 hours of their own time in workplace-organised fundraising and community engagement activities.

Employee Volunteering

During 2019, a Group Employee Volunteering Policy was developed and rolled out across our global operations, which entitles all employees to three days of paid volunteering leave each year. During the year we saw a 9% increase in the number of employee volunteering hours, compared with 2018.

Community Engagement Awards, 2019

The Group Community Engagement Awards raises awareness of community engagement and recognises the work that is being done by our colleagues. In 2019, 27 strong entries were received. Following a careful selection process, the Sustainability Committee and Group Chief Executive chose the winners: Spirax Sarco China (large company award), Spirax Sarco Colombia (small company award) and Chromalox Mexico (Group Chief Executive's award), which each received £5,000 towards their community engagement activities in 2020. In addition, Steam Business Development (UK), Chromalox Singapore and Watson-Marlow USA each received an honorary award of £2,500.

Winners

All employees from Spirax Sarco Colombia worked together to construct a new house for a single mother with three young children who were living in poverty; providing the family with a warm, safe place in which to live.

Chromalox Mexico undertook a wide range of community engagement activities, with widespread participation by employees. Activities included donating school supplies to 360 students; donating toys and gifts to disadvantaged children; organising a Christmas meal, party and gifts for children living in poverty; donating life-saving blood and hair for children with cancer; donating money raised through recycling to support families struggling to pay for cancer treatment and planting trees and plants at a local school.

Further reading

[Spirax Sarco China's community engagement activities.](#)

[See pages 40](#)

Honorary award winners

Employees in the Steam Business Development team in the UK raised money for Gloucestershire Young Carers, produced marketing materials for the charity pro-bono and spent a day volunteering at Acorns Children's Hospice. All Chromalox Singapore employees spent a day at a local hospital, playing games with patients with severe long-term medical conditions and providing them with tasty snacks. Employees of Watson-Marlow USA raised over \$14,000 for local charities and donated business outfits to unemployed people looking for work, toys and Christmas gifts to children in need, toiletries to a local homeless shelter and care packages for serving members of the armed forces, as well as established a school Science, Engineering, Technology and Mathematics programme, to be rolled out in 2020.

Focus for 2020

- Establish a Group-wide employee volunteering portal to facilitate ease of monitoring and reporting.
- Translate the Group Employee Volunteering Policy into the Group's core languages.
- Raise awareness of employee volunteering across the Group.