

# Sustainability Report

Sustainability is a key strategic priority for the Group; as we focus on improving the sustainability of our operations, and help our customers to do the same, we drive growth, increase efficiency and play our part in engineering a more sustainable future.

## 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; operations in accordance with laws and regulations; social and environmental impacts; ethical and social responsibilities; and customer and supplier relationships, to improve the sustainability of their operations.

We commit to engineering a sustainable future by focusing on five core areas: our workplaces, our supply chain, our environment, our customers and our communities, setting objectives and targets in each area.

## Our sustainability strategy: 2017 update

Throughout the year our focus has been on the implementation of our five year plans within each of our material sustainability topics. (Further information can be found in the reports for each topic on pages 54 to 61.)

A key priority during 2017 was to raise awareness of the sustainability strategy across the Group. During the year we launched a sustainability e-learning module, which is available in 15 languages; 2,732 employees completed the training during 2017. Increasing the number of employees who have completed the training will be a focus for 2018. We were pleased to welcome Gestra and Chromalox into the Group during 2017 and have begun to raise awareness of the sustainability strategy within these businesses and to involve them in its strategic implementation.

The Sustainability Committee met quarterly throughout the year, with presentations by the project leaders of each topic. The Committee oversees progress and performance and supports the implementation of the strategy. Progress was reported to the Group Chief Executive, Executive Committee and Board of Directors.

## Managing sustainability

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



“Engineering sustainable value creation requires the consistent implementation of ethical business practices, respect for the environment and our local communities, and a commitment to delivering outstanding solutions to customers.”

**Nicholas Anderson**  
Group Chief Executive

## Sustainability objectives

### 1. Our workplaces



#### Engineering for excellence

- To achieve Health and Safety (H&S) excellence through engagement, empowerment and fostering good behaviours, while targeting zero accidents.
- To promote diversity and equality through employment practices that are free from discrimination and in accordance with international human rights principles.
- To act in accordance with our Core Values, upholding a zero tolerance approach to bribery and corruption.
- To invest in developing the knowledge and skills of our people.

### 2. Our supply chain



#### Engineering the responsible way

- To focus on continuous improvement in our supply chain with particular emphasis on sustainability.
- To incorporate sustainability factors into our product design process, including energy efficiency, emissions, serviceability, recyclability and the availability of compliant and ethically sourced materials.

### 3. Our environment



#### Engineering for our planet

- To limit the environmental impacts of our operations through reducing water use and minimising and managing effluent and waste.
- To minimise the environmental impacts of our operations by managing energy consumption with the aim of reducing carbon emissions.

### 4. Our customers



#### Engineering sustainable solutions

- 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.

### 5. Our communities



#### Engineering better futures

- To engage positively with the communities in which we operate and offer financial support to approved charities.

## Sustainability spotlight: achievements in 2017

### Spirax Sarco Singapore recognised at iChemE awards

During 2017, Spirax Sarco Singapore received a highly commended award in the Training and Development category, from the Institution of Chemical Engineers (IChemE), Singapore in recognition of the company's provision of industrial steam training in Myanmar.

Since 2015, Spirax Sarco has partnered with the Myanmar Engineering Society to provide a month-long training course to engineering students to build their steam systems knowledge and help improve energy management in Myanmar. Spirax Sarco provides all of the training materials, stationery and expertise for the course, and three company employees give a total of 120 hours a year in support of the programme.

The iChemE awards, which are widely recognised as the world's most prestigious chemical engineering awards, reward organisations that deliver engineering excellence, societal benefit and sustainable impacts.

### Broad-Based Black Economic Empowerment, South Africa

In 2017 Spirax Sarco took steps to support the "Broad Based Black Economic Empowerment" initiative and at the same time give something back to the local community.

Spirax Sarco Services, a subsidiary of Spirax Sarco South Africa (Pty) Ltd, was established to provide on-site maintenance services to customers in South Africa. (Spirax Sarco South Africa will continue to offer all other Spirax Sarco solutions and services.) The new company is 51% owned by a charity called Tomorrow Trust, which supports orphaned and vulnerable children throughout their educational journey.

The charity focuses on developing academic and life skills, supporting students through school and college until they graduate fully prepared for a career in their field of study, empowering them to reach their full potential as self-sustaining members of society.



FTSE4Good

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

FTSE Group confirms that Spirax-Sarco Engineering plc has been independently assessed according to the FTSE4Good criteria and has satisfied the requirements to become a constituent of the FTSE4Good Index Series. Created by the global index company FTSE Group, FTSE4Good is an equity index series that is designed to facilitate investment in companies that meet globally recognised corporate responsibility standards. Companies in the FTSE4Good Index Series have met stringent environmental, social and governance criteria, and are positioned to capitalise on the benefits of responsible business practices.

# Sustainability Report *continued*

## Engineering for excellence

### Health and Safety

**Objective:** To achieve Health and Safety (H&S) excellence through engagement, empowerment and fostering good behaviours while targeting zero accidents

**Target:** Zero accidents



“As we focus on leading indicators we increase risk awareness and establish a culture that drives safe behaviours.”

**Mark Wyatt**  
Group Environment, Health and Safety Executive

#### Overview

Health and Safety (H&S) excellence is the cornerstone of our business. Reducing accidents and maintaining a safe working environment for our employees, contractors, visitors and customers are our primary aims. We are actively promoting a H&S culture, encouraging our employees to adopt safe working practices at all times. 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 required to adhere to the Group H&S Policy, operate within Group programmes and have detailed H&S management systems in place locally.

#### Performance in 2017

During 2017, our over seven day lost-time accident rate fell to 3.0 accidents per 1,000 employees (2016: 3.4). We benchmarked our performance against RIDDOR’s “Over 7-Day Rate of Reported Non-Fatal Injury Per 100,000 Employees, 2012/13-2016/17” in the UK manufacturing sector, which was 365 (3.65 per 1,000 employees). Our H&S performance in 2017 was therefore better than the industry average. Excluding businesses acquired in 2017, the number of accidents resulting in over three days of lost time, which includes over seven day accidents, fell to 20 in 2017. Four over three day accidents occurred post-acquisition in businesses that joined the Group in 2017, taking the total number of over three day accidents to 24. During the year, 14 of our 26 manufacturing sites did not have any over three day accidents and Watson-Marlow MasoSine maintained their world-class safety performance, this year achieving 18 years without a lost-time accident.

We significantly increased the number of H&S training units delivered to 24,747 (2016: 14,958). As part of our Behavioural Based Safety programme we have focused on reporting of employee concerns and near misses. 5,485 employee concerns were raised during 2017 (2016: 7,845). Each concern was reviewed and corrective actions taken. A total of 562 near misses were reported during the year (2016: 250). Each near miss was thoroughly investigated, corrective action taken, and learning shared across the Group. The high number of concerns raised and near misses reported demonstrates the success of our awareness campaigns and

the embedding of a H&S culture across the Group, which empowers employees to raise concerns and take action to report near misses. We employ 39 full-time, qualified H&S professionals and additional part-time EHS employees (2016: 32). As part of our due diligence process to ensure compliance with Group policies and procedures, during 2017 we completed 787 internal continuous improvement EHS inspections across our supply sites (2016: 489).

At the end of the year, 15 of our 26 manufacturing sites held OHSAS 18001 certification and a number of companies were working towards achieving it (2016: 11 of 19). All Watson-Marlow manufacturing sites established Behavioural Based Safety programmes during 2017.

During 2017, we opened a new Distribution Centre in Singapore. During the extensive refurbishment of the building we followed our internal Management of Change procedure to ensure the highest standards of H&S were met. The Centre was opened without any lost-time accidents.

#### Actions taken in 2017

We concentrated on two key themes throughout 2017: first, the training of managers and second, investment in engineering controls to reduce risk.

The first session of our Worldwide Leadership Conference was focused on workplace safety. The 107 senior managers present were instructed in the steps required to develop a strong safety culture. The training also focused on the importance of engaging employees and monitoring H&S performance using leading indicators. An external guest speaker delivered a powerful presentation about a serious industrial accident that he encountered while working for a global industrial company and the long-lasting impact this had on individuals and the business. During 2017, we also delivered Institution of Occupational Safety and Health “Safety for Executives and Directors” training to 30 executives and senior managers within the business.

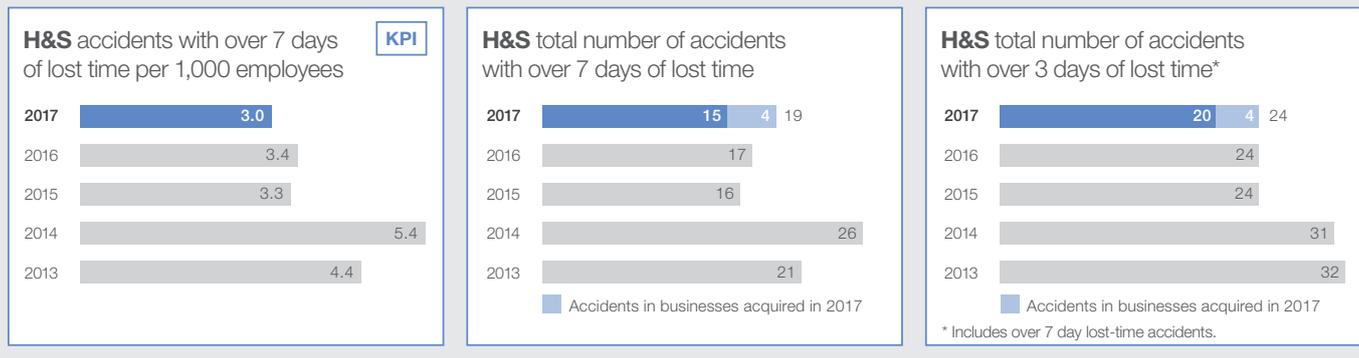
To further strengthen the safety culture, programmes and performance within our Spirax Sarco sales companies, we created regional EHS leadership roles and have appointed nine new EHS professionals whose remit will be to provide advice, training and H&S solutions to our companies, while implementing the Group’s roadmap to EHS excellence.

During 2017, we removed 59 machines from the business after a H&S risk was identified.

We have also started to align recent acquisitions, Gestra and Chromalox, to our H&S programmes and are investing in increasing the number of H&S professionals employed in these businesses.

#### Next steps for 2018

- Roll out cross-business H&S audits across the Steam Specialties division
- Create and deliver a bespoke Safety Leadership training programme for senior managers
- Roll out and adoption of the Group Lock-Out Tag-Out Policy across supply sites
- Embed regional EHS leaders within the Steam Specialties division



# Sustainability Report *continued*

## Engineering for excellence

### Employment practices

**Objective:** To promote diversity and equality through employment practices that are free from discrimination and in accordance with international human rights principles

**Target:** 33% of women on our Board, as opportunities arise



“Equitable and fair employment practices are central to ensuring the ethical and sustainable operation of our businesses.”

**Jim Devine**  
Group Human Resources Director

#### Overview

We have policies and commitments around the way that we treat people and we base our employment practices on our Core Values, in particular the value of respect. Along with the Group Whistle-Blowing Policy, our HR policies and systems provide a strong framework to protect the rights of employees and ensure their fair and equitable treatment.

A diverse workforce brings vitality and creativity to our workplaces and increases our ability to sustainably create value for our stakeholders. We seek to increase diversity at all levels of the organisation, with a particular focus on gender diversity. Our remuneration practices are designed to reward and recognise skills, experience and achievement, and to be free of gender bias. Employees are remunerated fairly for the work that they do and we do not promote or require excessive working hours.

Applicants and employees are treated equally during recruitment, transfer, promotion, training or salary assessment, and we do not discriminate on the basis of an individual’s gender, sexual orientation, age, religion, beliefs, maternity, or any other protected characteristic, as prescribed by law.

We are a member of the Business Disability Forum (UK) and the Employers Network for Equality & Inclusion (UK), give full and fair consideration to applications for employment made by disabled persons, having regard to their abilities and aptitudes, and support the continuing employment of individuals who become disabled during their employment with the Company. Disabled persons are entitled to the same professional development and opportunities for promotion as other Company employees.

Our Group Human Rights Policy recognises the right of all individuals to lead a dignified life, free from fear and want and free to express independent beliefs, as well as the right of employees to equal opportunities, non-discriminatory treatment, a safe working environment and a fair wage. We do not use forced, compulsory or child labour either directly or within our supply chain; we respect the rights of children; maintain workplaces free of victimisation, harassment or bullying; and accept the rights of employees to association and collective bargaining.

We communicate with employees through a variety of channels, to ensure that they have an understanding of the operations and performance of the Group. We undertake confidential employee surveys to assess our performance as an employer and have well-established grievance and whistle-blowing procedures to enable employees to raise concerns.

#### Performance in 2017

During 2017, two sizable acquisitions increased our global headcount by nearly 30%. These two businesses have a similar gender profile to the rest of the Group, meaning that our gender balance remains relatively unchanged with 5,628 males (2016: 4,243) and 1,630 females (2016: 1,141) across the workforce as a whole and 490 male (2016: 392) and 103 female (2016: 77) senior managers. However, on a like-for-like basis, excluding acquisitions, we made good progress in improving our senior management gender diversity, with the percentage of female senior managers increasing from 16% in 2016 to 20% in 2017. Board gender diversity remained unchanged with seven males and two females. During 2017, we participated in the FTSE Women Leaders (Hampton-Alexander) Review. With 22.2% female representation on our Board and 19.5% of Executive Committee and their Direct Reports combined being female, we were ranked 124th in the FTSE 250 for senior management gender diversity. We recognise that further actions need to be taken to increase the representation of women.

#### Actions taken in 2017

During 2017, we formalised our commitment to the promotion of diversity within our business as we established a Group Diversity and Inclusion Policy. We also increased our target for women on the Board to 33%, as opportunities allow. In accordance with Gender Pay Gap Reporting requirements in the UK, we implemented Gender Pay Gap reporting. Our 2017 Gender Pay Gap Report can be found on our website.

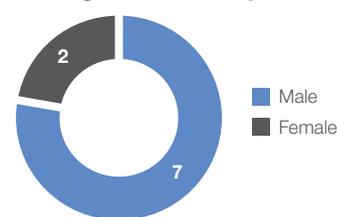
During 2017, we worked hard to address our gender imbalance through fair and transparent recruitment practices and compensation packages; talent management and succession planning; and by seeking to recruit and appoint females into senior management positions within the Group. In addition, we sought to redress gender stereotypes through educational outreach programmes in schools and universities, we continued to sponsor the Cheltenham Science Festival and partnered with the Cheltenham Science Group, a community interest company that is seeking to inspire children to love science, engineering, technology and maths.

As part of an on-going assessment of our employment practices and our due diligence processes to ensure that our policies are upheld and implemented across our businesses, we initiated a Group-wide HR survey and, for the first time, implemented a Global Employee Survey. Following the Employee Survey we established employee focus groups to enable more detailed feedback on areas identified for improvement and to ensure open and honest dialogue between our employees and senior management.

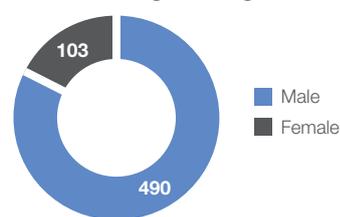
#### Next steps for 2018

- We will apply a Group-wide focus to identify opportunities to increase female representation in senior management roles and will define an action plan to help us to achieve this

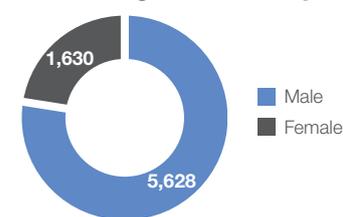
**Board gender diversity\***



**Senior management gender diversity\***



**Workforce gender diversity\***



\* At year end

# Sustainability Report *continued*

## Engineering for excellence

### Ethical business practices

**Objective:** To act in accordance with our Core Values, upholding a zero tolerance approach to bribery and corruption

**Target:** Zero incidents of bribery and corruption



“Developing and supporting a culture of integrity and ethical standards is of the highest importance for the Group.”

**Andy Robson**  
General Counsel and Company Secretary

#### Overview

The policies, practices and employee training put in place across the Group are developed specifically to provide a foundation for ethical business operations and to foster the Core Values of Respect, Accountability, Passion, Integrity and Delivery. Our Anti-Bribery and Corruption (ABC) Policy, along with our ABC employee training, is a fundamental part of our programme to establish guidelines and promote a culture of ethical behaviour in our operations across the globe. This training is provided in 15 languages in order to ensure that it is effective and to also convey the significance of compliance with these standards across the business worldwide. We are committed to bringing our Core Values and culture to our newly acquired businesses, Gestra and Chromalox, and to ensuring that we are a business free from bribery and corruption at all levels.

#### Performance and actions taken in 2017

We continue to provide a third-party, confidential whistle-blowing helpline, Safecall, to allow employees to raise concerns about any wrongdoing in the workplace. Safecall received several calls in 2017, an indication that the service is being successfully presented and made available to employees across the Group. All reports received by Safecall were thoroughly investigated by a relevant management team member and, as appropriate, follow-up measures were implemented. The Audit Committee reviewed post-action reports to ensure the management response was satisfactory.

With the addition of approximately 450 new employees following the Gestra acquisition, the Safecall whistle-blowing helpline was rolled out to the Gestra operating companies. Chromalox, with its 1,150 employees, has continued to use Convercent, a similar third-party whistle-blowing hotline provider. Both Gestra and Chromalox have procedures in line with Group policy to investigate and address any concerns raised through the whistle-blowing hotlines.

Our online ABC training module was completed by 317 employees in 2017, taking the total number of employees who have completed the training since its introduction in 2012 to 4,777. A further 659 employees completed an ABC refresher course during 2017. Chromalox continued to implement its existing ABC training course for its employees, but will adopt the Group's ABC training in 2018.

Compliance with both the ABC training and the whistle-blowing procedures are validated by our internal and external auditing functions.

#### Next steps for 2018

- Refresh our ABC training by creating and rolling out a new ABC training course to all Group companies
- Continue to promote the use of the whistle-blowing hotline and online Global Gifts and Hospitality register across the Group

### Training

**Objective:** To invest in developing the knowledge and skills of our people

**Target:** Increase the impact of our technical and leadership training offering



“Developing our people is essential to ensure that we deliver ever improving service and products to our customers.”

**Shaun Laubscher**  
Head of Talent and Organisational Development

#### Overview

Developing the knowledge and skills of our people is central to our strategy for growth and for the long-term sustainability of our business. All employees are actively encouraged to pursue development opportunities. As they enhance their knowledge and skills we are better able to deliver value to our customers and provide shareholder value.

We have 53 training centres located worldwide, through which we deliver technical training to our employees, and have developed an extensive e-learning library. Our sales and service engineers undergo rigorous on-the-job training and mentoring and employees at all levels are encouraged to participate in professional development opportunities.

#### Performance and actions taken in 2017

During 2017, we continued to strengthen the knowledge and skills of our sales and service teams and to develop our pipeline of talent. In 2016 we established the Spirax Sarco Academy to oversee the learning and development of the Spirax Sarco Steam Specialties division. By the end of 2017 we had translated the training materials and made them available in 16 languages and rolled out the Academy's compliance programmes to almost 1,100 of our customer facing employees.

Watson-Marlow also invested in strengthening and expanding its training programmes, adding 50 new e-learning units to the company's online training library during 2017, taking the total number of courses to 70. Comprehensive online product training was delivered to support new product releases. In addition, four three-day sales conferences were held, attended by nearly 400 employees, which focused on product and market training to support and strengthen the effectiveness of the company's direct sales teams.

13 senior managers attended a two-week Advanced Management Programme, run by the Ashridge Business School, during the year, taking the total number who have attended to 85. The programme covers such topics as effective people management; driving growth and innovation; and delivering results. By investing in the professional development of our managers we better equip them to support the long-term success of the business. In addition, 31 managers participated in our Advancing High Performance leadership programme.

#### Next steps for 2018

- Continue to roll-out the training materials of the Spirax Sarco Academy across the customer facing employees of the Steam Specialties division
- Enhance our leadership development offering to managers and senior leaders

# Sustainability Report *continued*

## Engineering the responsible way

### End-to-end supply chain

**Objective:** To focus on continuous improvement in our supply chain with particular emphasis on sustainability

**Target:** 90% of direct material suppliers, by spend, of recently acquired businesses (Hiter, Aflex, Gestra and Chromalox) to have signed our Supplier Sustainability Code by Dec. 2018



“By focusing on achieving excellence in all aspects of our supply chain, while also monitoring the standards of our suppliers, we enhance the sustainability of our operations.”

**Ian Farnworth**  
Group Supply Chain Director

#### Overview

Improving the sustainability of our end-to-end supply chain, which encompasses all the activities that transport and transform materials and components into finished products and delivers them to customers, is a key strategic objective for the Group.

We operate a regional manufacturing strategy, with 26 manufacturing sites globally. By manufacturing close to the point of sale we improve customer service by reducing lead times, ensure that our products meet local specifications, reduce transportation requirements for finished products and provide local employment in the regions in which we operate.

A central component of our supply chain sustainability programme is our Supplier Sustainability Code (Code), which outlines the expectations that we have for suppliers, particularly in relation to the fair treatment of employees and their environmental impacts, and enables us to embed sustainability criteria into our purchasing processes.

The Code specifies that our suppliers must not use forced, bonded or non-voluntary labour; should establish recognised employment relationships in accordance with national laws, including non-discriminatory employment practices, maximum working hours and the freedom of association; and exercise clarity in relation to wages.

Suppliers' facilities must be constructed and maintained to an acceptable standard and their activities must be safe for the health of their employees, their contractors, the local community and the users of their products. Suppliers must have an appropriate H&S policy, H&S operating and management systems and seek to prevent work-related injuries and illnesses, through effective risk mitigation.

Suppliers must avoid the use of substances dangerous to their employees' health and safety; including, but not limited to, carcinogenic, mutagenic and toxic to reproduction substances. All products and services delivered by suppliers must meet the quality and safety standards required by applicable laws.

We expect our suppliers to operate within the laws of their country, conduct business ethically and free from bribery or corruption, and adhere to the UN Guiding Principles on Business and Human Rights and the Core Conventions of the International Labour Organisation. We do not countenance the use of child labour.

Lastly, our suppliers are expected to take steps to mitigate their environmental impacts, deliver a high product quality and source responsibly.

#### Modern Slavery Act 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.

To read the statement in full, please visit the Group's website.  
[www.spiraxsarcoengineering.com/Sustainability/Pages/our-supply-chain.aspx](http://www.spiraxsarcoengineering.com/Sustainability/Pages/our-supply-chain.aspx)

#### Performance in 2017

Having exceeded our phase 1 target of 90% of direct material suppliers, by spend, to have signed the Code in 2016, our phase 2 target was for 90% of sales company direct suppliers, by spend, to have signed our Code by the end of 2017.\* 86% of suppliers signed the Code in 2017 taking the total number of suppliers who have signed the Code, excluding new businesses, to 94%. We will continue to focus on reaching our phase 2 target in the early part of 2018. During 2017, we exited 12 suppliers who were not prepared to sign the Code and we are working with the remaining suppliers on a continuous improvement basis to further develop their capabilities.

In accordance with our Group policies, no breaches of Human Rights or incidents of modern slavery were identified in our supply chain during 2017.

\* Excluding suppliers of businesses acquired in 2016 or 2017.

#### Actions taken in 2017

During 2017, we continued to roll out the Code to all new direct material suppliers and extended the scope to include suppliers of our sales companies. We also commenced a limited roll out of the Code into recently acquired businesses, in those areas deemed to be of greatest risk.

We enhanced our monitoring of the environmental and sustainability performance of suppliers as we formalised a broader set of criteria into our supplier audits and began to audit suppliers against these more rigorous criteria. This due diligence process enables us to monitor supplier performance and conformity with Group policies.

We have undertaken training of key personnel in supply chain risk management and reinforced and standardised our approach to supply chain risk management.

#### Next steps for 2018

- Phase 3 roll out of the Code to direct material suppliers of recently acquired businesses Hiter, Aflex, Gestra and Chromalox
- Expand supplier audits incorporating sustainability criteria and enhance the training of key audit personnel
- Apply audit results in the supplier selection process to preferentially select suppliers
- Continue to mitigate supply chain risks

# Sustainability Report *continued*

## Engineering the responsible way/Engineering for our planet

### Product responsibility

**Objective:** To incorporate sustainability factors into our product design process, including energy efficiency, emissions, serviceability, recyclability and the availability of compliant and ethically sourced materials

**Target:** Continuing compliance with all applicable EHS standards, while meeting customer expectations of performance and cost

“Applying eco-design principles to new product development enables us to deliver safe and ethically produced products to the market.”

**Stephen Dewfall**  
Group R&D Manager (Steam Specialties)



#### Overview

We apply robust product development processes and incorporate best practice in the areas of design-for-manufacture and compliance with safety and environmental standards, to ensure that our products are safe for our customers to use, are manufactured using ethically sourced materials and are environmentally sound. We apply eco-design principles; avoid the use of hazardous materials; consider the availability of raw materials; and place strong emphasis on in-service performance, product life and continuous improvement.

All products and product developments undergo assessment and validation by analysis or physical testing, in line with legislation and national standards relevant to the location of sale or release. Structured internal compliance processes enable the identification of regulatory requirements and compilation of supporting evidence. Where applicable, third-party validation testing is employed. Central policies exist to ensure responsibilities for product safety and compliance are clear and understood.

Our products are sold with Installation and Maintenance Instructions, ensuring that they can be safely installed and maintained.

#### Performance and actions taken in 2017

During 2017, we established an auditable process to link supply chain sustainability to our eco-design and new product development processes within the Spirax Sarco Steam Specialties business and Watson-Marlow Ltd. This means that we will only design new products that contain materials available from suppliers that have signed the Supplier Sustainability Code, preventing us from specifying materials or substances that do not comply with eco-design standards or from using suppliers that cannot meet our required standards.

We also completed a best practice review of eco-design practices across the Group (excluding the 2017 acquisitions).

#### Next steps for 2018

- Complete a best practice review of new product development processes in recently acquired businesses Gestra and Chromalox
- Standardise Group eco-design principles across the new businesses
- Improve the use of quality and warranty returns data as an indicator of the success of our eco-design processes
- Identify a feedback mechanism that uses production quality metrics to assess the manufacturing effectiveness of our eco-design principles

### Water and waste

**Objective:** To limit the environmental impacts of our operations through reducing water use and minimising and managing effluent and waste

**Target:** To identify opportunities for waste reduction, increase recycling rates and reduce water use

#### Overview

We view water as an important resource that requires careful management and take steps across our business to use it efficiently. We select specialist contractors to manage waste, focusing on technical recycling capabilities and safe Duty of Care practices.

#### Performance and actions taken in 2017

During 2017, we appointed a third-party adviser to review our water and waste data collection processes, prior to seeking external verification of the data. The review identified some potential verification challenges for waste data from sites outside of Europe. We have decided not to report global Group waste data until assurance processes are fully implemented and demonstrate improved levels of material confidence.

All of our European sites operate under the EU Waste Framework Directive. Therefore, we are confident in the accuracy of their data. During 2017, our European sites (excluding acquisitions) generated 1,811 tonnes of waste, of which 1,543 tonnes (85%) was recycled and 268 tonnes (15%) was sent to landfill. There were no incidents relating to breaches of legislation or harm to the environment.

During 2017, our manufacturing facility and Group headquarters in Cheltenham became the first of our businesses to achieve zero waste to landfill and, in a drive to minimise waste and highlight the importance of waste management, we ran our 2017 Worldwide Leadership Conference as a “paperless” event. This was achieved by providing all delegates with electronic devices for viewing presentations and conference materials, and making notes. By going paperless, we saved over 41,000 sheets of paper. Our water use varies considerably due to changing demands for steam generation during new product development, quality and safety assurance testing. During 2017, our global operations (excluding acquisitions) had a total water consumption of 167,000m<sup>3</sup>.

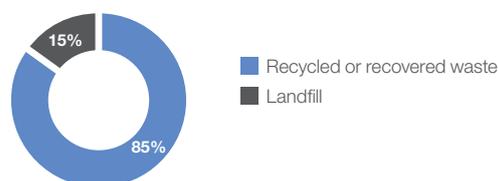
To reduce water consumption, an increasing number of our sites, particularly in water stressed regions, are harvesting grey water for site irrigation and flushing toilets; this is a design requirement for new manufacturing plants.

Throughout the year we completed EHS site audits and “treasure hunts” across our Spirax Sarco and Watson-Marlow facilities, to review compliance with the Group EHS Policy and to identify opportunities to improve our environmental sustainability.

#### Next steps for 2018

- Sustain our commitment to waste minimisation and zero waste to landfill through the example of our Cheltenham operations
- Improve waste data quality and reporting from all global operations
- Raise awareness of water as a key resource and reduce consumption
- Roll out environmental audits in Gestra and Chromalox

Waste recycling, Europe, 2017\* %



\* Excludes businesses acquired in 2017.

# Sustainability Report *continued*

## Engineering for our planet



### Energy and carbon

**Objective:** To minimise the environmental impacts of our operations by managing energy consumption with the aim of reducing carbon emissions

**Target:** To achieve a year-on-year reduction in our energy consumption and CO<sub>2</sub>e emissions intensity



“We are proactively managing our energy use and reducing the CO<sub>2</sub>e emissions intensity of our operations.”

**Richard Hildersley**  
Group Energy & Environment Manager

#### Overview

Anthropogenic climate change is a global challenge that can only be addressed through the concerted effort of individuals, businesses and governments. In accordance with national and international directives, we endeavour to reduce the carbon intensity of our business and minimise our carbon footprint.

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 entities where we do not have operational control. In 2017 this included Econotherm. Also excluded from the footprint boundary are emission sources from operating companies established or acquired during 2017. We have used the GHG Protocol Corporate Accounting and Reporting Standard (revised edition) and emission factors from the UK Government’s GHG Conversion Factors for Company Reporting 2017 to calculate our total CO<sub>2</sub>e emissions figures.

#### Performance in 2017

Our CO<sub>2</sub>e 2017 emissions data have been audited by TÜV UK Ltd, part of TÜV NORD Group, 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 10% 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 2017 to 31st December 2017 (inclusive) are: 17,230 tCO<sub>2</sub>e for Scope 1 and 14,828 tCO<sub>2</sub>e for Scope 2.

TÜV UK Ltd, London, February 2018”

The increase in total emissions reflects the expansion of our business, including the new operations that were acquired or established during 2016 or that began trading on 1st January 2017, whose emissions were included for the first time in 2017, set against emissions reductions made elsewhere across the Group as a result of our energy saving activities. Excluding new businesses we reduced our emissions by 2%. Despite the total increase, we are pleased to report that we made further progress in reducing the emissions intensity of our business. During 2017, our emissions intensity reduced by 4%, giving a 20% reduction since 2013, our benchmark year.

#### Actions taken in 2017

In addition to the environmental site audits and “treasure hunts” that were carried out during the year, the Group Energy and Environment Manager conducted several site reviews to assess conformity with Group policy and to identify possible opportunities for improvements.

To facilitate ease of reporting, during 2017 we undertook a review of global carbon accounting software, with the intention of procuring our selected software in 2018.

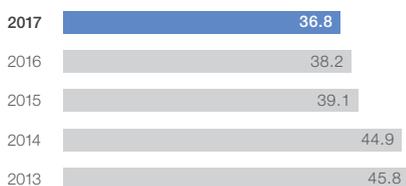
Spirax Sarco Ltd (UK), Spirax Sarco China and Watson-Marlow Ltd (UK) achieved certification to energy management standard ISO50001, taking the total number of our manufacturing sites with the standard to six. All remaining Spirax Sarco steam business manufacturing sites are actively working towards certification to the standard.

An efficiency review of the Combined Heat and Power plant in Spirax Sarco UK led to a 6% increase in productivity, with further improvements, including grid export, identified for 2018. Compressed air efficiency was significantly improved in Spirax Sarco USA, through investment and management techniques, improving energy efficiency. Spirax Sarco France also undertook a detailed review of compressed air systems within their manufacturing facility.

#### Next steps for 2018

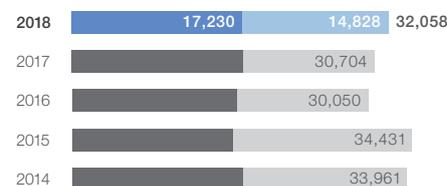
- Implement carbon accounting software
- Further extend factory lighting conversion to LED technology across the Spirax Sarco steam business and Watson-Marlow
- Implement compressed air system enhancements in Spirax Sarco France, USA and UK, utilising waste heat recovery and through optimising hardware and controls

**CO<sub>2</sub>e intensity** tonnes per £m of inflation adjusted sales, at constant currency\*



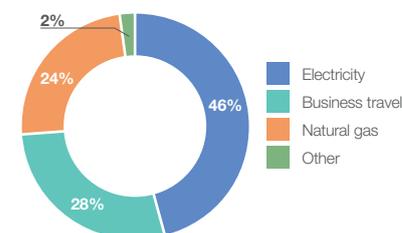
\* Excludes businesses established or acquired in 2017.

**Total Group CO<sub>2</sub>e emissions (scope 1 and 2)** tonnes\*



■ Scope 1 ■ Scope 2

**Greenhouse gas emissions inventory\***



# Sustainability Report *continued*

## Engineering sustainable solutions



### Customers

**Objective:** 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

#### Overview

Our direct sales business model is founded on our ability to provide solutions to customers that improve their operational sustainability through increasing efficiency, reducing energy, water or chemical use, or reducing waste.

Reducing energy use and lowering CO<sub>2</sub>e emissions are key sustainability drivers for our customers who are seeking to lower costs and increase their environmental sustainability. We provide products and services that help steam users to reduce their energy consumption, increase the efficiency of their steam systems and recover and reuse thermal energy. Our electrical process heating and temperature management solutions can deliver energy savings and efficiencies, and the unique action of our pumps can provide significant energy savings over other pump types. For example, MasoSine pumps, from Watson-Marlow, are particularly adept at handling viscous fluids, which other pumps require large electrical motors to operate. Switching to a MasoSine pump for high viscosity pumping applications can deliver up to 50% power savings in comparison to lobe or circumferential piston pumps.

The products and services of our Steam Specialties division can deliver efficiencies in water use, reducing total site consumption. For example, by improving the efficiency of condensate return, our products prevent condensate from being discharged to the drain, enabling its reuse. We also supply solutions to capture and utilise flash steam, which would otherwise be lost to atmosphere, and improve the quality of boiler feedwater, reducing the frequency of boiler "blow-down", thus reducing water use. The application of Watson-Marlow pumps can also significantly reduce water use. Within the mining industry, the installation of a Bredel pump, from Watson-Marlow, can reduce water consumption by over 70%, equating to savings of 900,000m<sup>3</sup> of water per year compared with a common centrifugal pump.

#### Performance in 2017

We estimate that a select range of energy management products sold during 2017 will reduce our end users' CO<sub>2</sub> emissions by 5.8 million tonnes annually. The methodology used to determine this external impact has been independently assessed with the assistance of Ricardo Energy & Environment. The methodology used was updated during 2017 to include an expanded range of Spirax Sarco steam business products (see Actions in 2017) and to ensure that the underlying principles are consistent with current data on steam system operations as well as taking revised emission factors into account. The calculation is based on a selected range of

energy saving products for which we can quantify savings with reasonable accuracy. Many other of our products, such as blow-down heat recovery, FREME, Heat Pipe Heat Exchangers, Thermocompressors and Vapour Condensers, will also provide CO<sub>2</sub>e savings but as these are not easily quantifiable they are excluded from our methodology.

#### Actions taken in 2017

Following a review of the products included in our customer CO<sub>2</sub> emissions saving metric, we identified a small selection of additional steam system products for which it is possible to quantify CO<sub>2</sub> savings with sufficient accuracy to enable their inclusion in the calculation. Additional products included within the metric in 2017 are: Smart Electro-Pneumatic Positioners, which have industry-leading low levels of air consumption and reduce compressed air usage, having a direct impact on energy consumption and CO<sub>2</sub> emissions; BSA Bellows Sealed Stop Valves, which eliminate stem seal leakage; and Spirax EasiHeat packages, which generate hot water using steam, avoiding the energy losses associated with the storage of hot water. The assumptions and methodology used to include these additional products were reviewed by Ricardo Energy & Environment, who also reviewed the assumptions for all other products included in the calculation (Flash Vessels, Steam Traps, Condensate Pumps and Flow Meters) and updated the model.

During the year we undertook two test projects to demonstrate the sustainability of the Qdos pump, from Watson-Marlow. In the first, we completed a benchmark test comparing the accuracy of the Qdos pump against two key competitor pumps, to demonstrate the chemical savings, in litres, of the existing installed base of Qdos pumps. The test has been completed and a White Paper is in development. In the second test, the Qdos pump was monitored in a paper industry application, to demonstrate the positive environmental impacts of the pump as expressed in fossil fuel energy consumption savings and subsequent reduction in greenhouse gas emissions. The test has been completed and data is being analysed.

#### Next steps for 2018

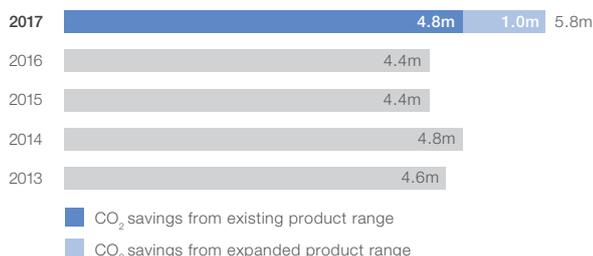
- Conduct a customer trial to analyse the impact of de-scaling management on heat exchanger efficiency
- Assess the impact of single use systems on energy and water savings in the Biotechnology industry
- Complete a customer trial to examine the energy saving benefits of using Qdos pumps in a moulded fibre application
- Explore the feasibility of using Watson-Marlow technology to pump solid butter in a dairy application and assess the energy saving benefits

#### Case study: Spirax Sarco Australia helps customer reduce gas use by 23%

In a drive to increase energy efficiency and reduce gas consumption at their meat processing plant in Dubbo, New South Wales, Fletcher International Exports identified steam system efficiency improvements as an effective way to rapidly reduce gas consumption. Working with Fletcher's on-site engineering team, Spirax Sarco identified four key areas for improvement 1) recover flash steam and reuse it in other processes, 2) increase condensate return, 3) increase boiler house efficiency and 4) improve steam distribution. The engineered solution designed by the project team had significant benefits, which were measured and verified by independent, third-party engineers.

As a result of the installed solution, gas consumption reduced by 23%, saving an estimated 27,000 gigajoules of gas per year, equating to monthly savings of approximately AUS\$45,000 (over £26,500), or AUS\$540,000 (£319,000) per year. In addition to energy savings, boiler water consumption is expected to reduce by eight million litres a year and chemical use has also been reduced, saving a further AUS\$10,000-15,000 (£6,000-£9,000) a year. Including installation, the project is expected to have a payback period of 12 months or less.

#### Tonnes of CO<sub>2</sub> emissions our end users saved as a result of purchasing our energy management products\*



\* Spirax Sarco steam products only, excludes Gestra.

# Sustainability Report *continued*

## Engineering better futures



### Community engagement

**Objective:** To engage positively with the communities in which we operate and to offer financial support to approved charities

**Target:** All Group manufacturing companies to participate in at least one community engagement activity in 2018

#### Overview

As a global business, we can be a force for good in our local communities around the world. We seek to have a positive impact in the communities in which we operate by making charitable donations to worthwhile causes and contributing time, resources and expertise where there is a local need. Our Group Charitable Donations Policy guides our community engagement activities. Our primary focus is education (particularly in the sciences and engineering), but we seek to identify and respond to local needs and will also offer support for the underprivileged young, disadvantaged, disabled and elderly, and contribute to natural disaster relief.

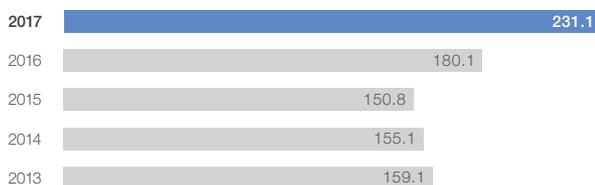
#### Performance in 2017

During 2017, we again increased funding to the Spirax Sarco Group Charitable Trust, which made 56 donations ranging in size from £150 to £20,000 with a total value of £231,150 (2016: £180,150). For example, we donated £20,000 to the National Star College in Cheltenham, which provides specialist further education and training to young people aged 16 to 25 with complex physical, educational and emotional needs, taking total donations from the Trust to the College to £159,000 in the last 10 years. We also donated £20,000 each to the American Red Cross' Hurricane Irma and Hurricane Harvey relief funds. A further £150,000 was donated to charitable causes by our operating companies during 2017 (2016: £87,000). In addition to financial donations, our operating companies donated the equivalent of £33,000 in in-kind donations such as products and office equipment, incurred management costs and contributed over 1,900 hours of working time to community engagement activities. Using an average hourly salary to estimate the cost to the company of employee volunteering, we estimate that the total value of our operating companies' community engagement activities in 2017 was in excess of £230,000. In addition, our employees donated £96,000 of their own money and 344 hours of their own time in workplace organised fundraising and community engagement activities. We also achieved our 2017 target of establishing community engagement champions across the Group.

#### Actions taken in 2017

During 2017, each of our operating companies appointed a community engagement champion, either individually or in conjunction with another Group company. This network of community engagement champions are responsible for identifying opportunities for participation in community engagement activities, organising activities, sharing success stories and data collection. While integrating into the Group, Gestra and Chromalox have each appointed a central community engagement champion. Once fully integrated, these companies will expand their network of champions.

**Group Charitable Trust donations £'000**



The community engagement data collection framework, which was established and rolled out at the end of 2016, was utilised in 2017, enabling more detailed performance data to be reported this year.

During the year we launched the Group's first "Community Engagement Awards", with all Group companies having the opportunity to enter. Twelve outstanding entries were received from across the business, including entries from Gestra, Watson-Marlow and Spirax Sarco. Congratulations to the winners: Spirax Sarco New Zealand (small company), Spirax Sarco China (large company, joint winner) and Spirax Sarco Argentina (large company, joint winner), which were selected by the Group Sustainability Committee and approved by the Group Chief Executive. The winning companies each received £5,000 to be spent on community engagement activities locally. The Sustainability Committee also awarded a Highly Commended prize to Spirax Sarco Brazil; £1,000 to be spent on the company's community engagement activities.

#### Next steps for 2018

- Strengthen the community engagement data collection process
- Promote employee volunteering across the Group

#### 2017 Community Engagement Award Winners

##### Spirax Sarco New Zealand

Designed and donated a bespoke, modular Heat Exchange system to the Engineering facility of the University of Canterbury in Christchurch. The purpose of the donation is to enable hands-on training for young engineers, allowing students to manipulate process conditions in a safe and controlled fashion. The donation promotes steam engineering knowledge, helping to meet a skills gap, and raises awareness of Spirax Sarco amongst young engineers.

##### Spirax Sarco China

In ZunYi (a city in the poorest province of China) many talented students drop out of school because their families cannot afford the daily living costs needed to keep them in education. Working with a local charitable organisation, in 2017 Spirax Sarco China donated RMB 1,000 each to 50 Grade 11 students and RMB 2,000 each to 35 Grade 10 students, to help with their living costs. Students were selected based on academic performance and family circumstances (poverty). The students will be supported through the full three years of high school. A team of eight volunteers from Spirax Sarco also delivered a 1.5 hour class each week, for 12 weeks, to 55 pupils at a local school for the children of low income migrant workers.

##### Spirax Sarco Argentina

Formed a cross-functional Community Engagement Committee and developed a community engagement roadmap. Throughout the year, a wide range of activities were undertaken such as the donation of products, furniture and hardware that are no longer in use to schools, universities and technical colleges; interview training for young people; lectures to university and college students; the donation of waste paper to raise money for a children's hospital; and sponsorship of a charity for children with cancer.

##### Spirax Sarco Brazil

In partnership with Hiter, acquired in 2016, Spirax Sarco provided five hours of training to 27 students (14-19 years old) to help them prepare for finding their first job. In another activity, Spirax Sarco, Hiter and Watson-Marlow joined several other local companies to revitalise a poorly funded local school. The companies donated the paint and the volunteers each gave a day's labour.