

# Doing the Right Thing

There are several fundamental areas of our business that allow us to operate safely and sustainably, providing a solid foundation on which to grow, continue to innovate and be different.

The safety of our employees and neighbours is of paramount importance to us. In 2018, all manufacturing sites globally implemented our behavioural safety system. We are also increasingly focusing on the mental health and wellbeing of all employees, with awareness campaigns and training taking place across the Group.

2018 saw us meet our target of ensuring that all Process Risk Reviews for high hazard processes across our operations meet the corporate standard. This has involved a rigorous review of nearly 200 processes and a huge effort by our in-house Group Safety, Health and Environment (SHE) team.

We strive to minimise our impact on the environment through a focus on reducing water consumption, minimising energy usage, reducing greenhouse gas (GHG) emissions and reducing waste across our operations. Where we are investing in new infrastructure, we are

incorporating sustainability from the very beginning of the project, at the design stage, utilising techniques such as SUSOP® (SUSTainable OPERations) to ensure that all aspects of sustainability and resource efficiency have been considered.

Globally, our manufacturing sites have robust and comprehensive quality management systems in place to ensure that we supply high quality products, on time in full, with the exceptional service our customers rely on.

## Highlights

### 9.8%

reduction in greenhouse gas emissions intensity since 2015

### 17.8%

reduction in waste to landfill since 2015

## Completion

of all Process Risk Reviews to internal quality standard

## Environmental Stewardship



In 2016, we established five year targets against a 2015 baseline for the reduction of our environmental impacts to land, water and the atmosphere. In 2018, our water consumption was 3.4% lower than the baseline year of 2015 and we were awarded a B- by CDP for our water disclosure, reflecting our management of water reporting and conservation. With the commissioning of the bio-surfactants plant, making ECO products at our Atlas Point manufacturing site in North America, their water consumption increased, therefore while we have reduced our overall consumption since 2015, there is progress to be made to hit our target of a 10% reduction by 2020.

Our manufacturing site in the water stressed region where our Mevisa site is situated, near Girona, Spain has continued to reduce water consumption through completion of their closed-loop cooling system, as well as through the re-use of water from the on-site effluent treatment plant. Further water reduction initiatives are planned across our manufacturing sites to enable us to achieve this important target.

2018 saw a further reduction in our waste sent to landfill: we have now achieved a 17.8% reduction since 2015, exceeding our 2020 target of a 10% reduction. In 2018, seven of our manufacturing sites sent zero waste to landfill.

Volatile Organic Compound (VOC) emissions have increased by 4.1% since 2015. Our VOC emissions are very small and the type we emit, typically solvents such as ethanol, have little or no known global warming potential. However, we continue to measure them to minimise losses to the environment and we will continue to progress towards our 2020 target of a 10% reduction.

### GHG emissions

Since our 2015 baseline year, total scope 1 and 2 greenhouse gas (GHG) emissions have risen by 9.0%. Within this, our scope 1 emissions have increased by 17.4%, while we have seen a 6.3% decrease in location based scope 2 emissions.

These figures must be viewed within the context of our bio-surfactants plant being commissioned to produce our bio-based ethylene oxide (EO) in 2018, at our Atlas Point manufacturing site in North America. Bringing the manufacture of one of our largest raw materials in-house in this way has moved the emissions associated with its manufacture from our scope 3 inventory into scope 1, resulting in an increase that looks dramatic compared to our baseline pre-EO manufacture. Once we have installed extra combined heat and power (CHP) capacity to burn more landfill gas at this site, we will be able to manufacture the EO more efficiently and using a larger proportion of renewable energy.

We have made good progress in reducing our scope 2 emissions. Since October 2018, all UK sites are now sourcing 100% renewable electricity, along with Mevisa in Spain and Gouda in the Netherlands. In 2018, our market based scope 2 emissions were 45,974 tonnes CO<sub>2</sub>e, a greater than 20,000 tonne CO<sub>2</sub>e reduction when compared to location based emissions.

In 2018, we scored a B from CDP for our climate change response, recognising management in our approach to our GHG emissions reductions.

### Energy use

Since 2015, our overall energy use has increased by 14.9%, due to our continuing production expansions, in particular the commencement of bio-based EO production at Atlas Point. During this time, our energy intensity figure has fallen by 5.2%, a measure of our efforts to increase efficiency.

In 2018, 21.1% of the energy used came from non-fossil fuel sources. We expect this figure to increase next year as we install more CHP capacity at Atlas Point.

### GHG emissions

Since 2015, our baseline year, total scope 1 and 2 GHG emissions have risen by 9.0%. Within this, our scope 1 emissions have increased by 17.4%, whilst we have seen a 6.3% decrease in scope 2 emissions. Read more about the reasons behind these changes above.

We are reporting location based scope 2 emissions in order to directly compare to our baseline year of 2015. However, our verified market based scope 2 emissions, which reflect our efforts to purchase renewable electricity, were 45,974 tonnes CO<sub>2</sub>e in 2018.

<sup>1</sup> Scope 1 emissions are calculated using the International Energy Agency's published conversion factors for the tonne equivalents of CO<sub>2</sub>. Scope 2 emissions are market based (location based for 2015 and 2016)

<sup>2</sup> Value added is defined as operating profit before depreciation and employee costs at 2015 constant currency

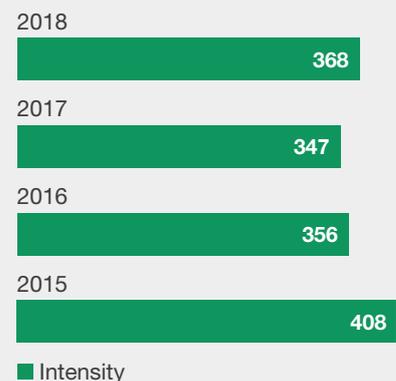
Our chosen measure of GHG emission intensity divides our GHG emissions by value added<sup>2</sup>: a measure of our business activity. Since 2015, our GHG emissions intensity has fallen by 9.8%, illustrating how we are decoupling growth from our environmental impact.

### GHG emissions (TeCO<sub>2</sub>e)<sup>1</sup>



Our scope 1, 2 and 3 GHG emissions are verified by Carbon Smart. Their formal Independent Verification Statement is available at [www.croda.com/carbonverification](http://www.croda.com/carbonverification)

### GHG emissions intensity (TeCO<sub>2</sub>e/£m)



# Doing the Right Thing

## Process Safety



Process safety is about keeping our manufacturing sites safe and legally compliant. It is a key Material Area to us as we take the safety of our employees and the communities in which we operate very seriously. As part of this, we invest in equipping all our employees with thorough training to manage and react to an incident, should one ever occur on site.

In 2018, we achieved our target of having all our Process Risk Reviews meet the corporate quality standard following independent assessment by our specialists in the Group Safety, Health and Environment (SHE) department. A Process Risk Review is required for a manufacturing process where the risk of a fatality has been identified as being the worst-case outcome from an accident.

In total, almost 200 processes were identified and rigorously assessed. The corporate standard requires that a thorough risk assessment is completed using a multi-disciplinary team of people and a recognised methodology appropriate to the level of hazard of the process. Where required, action plans are implemented to minimise the possibility of harm to people and the environment.

All Process Risk Reviews are subject to a five year renewal period and include: consideration of operating experience in the intervening period; changes made to plant and equipment; relevant incident history from both inside and outside the company; technology changes; and any changes made to industry guidance and recognised good practice.

Two years ago, we introduced a measure to help highlight opportunities for improvement in our operational process safety performance. The Process Safety Incident Rate is plotted at site level and records all types of incidents, such as demands on relief streams and plant control systems, rather than purely losses of containment. An internal measure was chosen following a review of externally used benchmarking conventions, due to their focus on losses of containment and the large reporting threshold quantities relative to the material volumes found on our manufacturing sites.

This year, to act on the information highlighted by the Process Safety Incident Rate, several teams were established to identify potential process improvements, such as pressure relief streams, trip and alarm system activations, losses of containment and the potential for fires. Each team is peer group led and comprised of senior operational and engineering employees from selected manufacturing sites around the world.

### Atlas Point incident

At the end of 2018 an incident unfortunately occurred at our Atlas Point manufacturing site in North America involving a release of ethylene oxide. The advanced safety features incorporated into the plant design, including monitors and automatic water deluges, enabled the facility to be shut down safely and securely, containing the release with no injuries to the local community or our employees on site: five employees working on site at the time of the incident sought medical advice as a precautionary measure in the week after the incident and one individual was placed under observation.

Before the plant was commissioned, we worked with local emergency services and first responders to ensure that they understood the plant, what it produced,

the nature of the processes and how to manage a release should one occur. Such thorough training and information sharing meant that during the incident, first responders were able to quickly assess and work with our employees to help contain the release and prevent harm. This quick and collaborative response ensured that the plant was shut down safely and the release contained, enabling all our site operations, except for the ethylene oxide manufacturing plant, to continue operating as normal.

We are currently working with independent experts to conduct a thorough investigation into the incident and identify any preventative actions that can be put in place, before it is brought back on stream in a safe and timely manner.

## Quality Assurance



Our customers rightly expect the same quality and standards from all our businesses and from each of our global manufacturing locations. We can be supplying individual multinational customers from multiple manufacturing sites, and as a global business we seek to standardise and unify the quality standards to which we operate in all parts of the world. ISO 9001 and ISO 14001 standards are a pre-requisite for our manufacturing sites, together with OHSAS 18001.

For our manufacturing sites producing personal care ingredients, we implemented EFfCI GMP standards with 14 sites certified globally. Although this is a European standard, we chose to implement it in America and Asia, exemplifying our uniform and consistent approach to quality.

Similarly, for our sites manufacturing health care excipients, we have EXCiPACT certification in all regions. Beyond these, our certification for other increasingly important and differentiating standards, including RSPO and Halal, extend to our sites in all regions.

For our recently acquired subsidiaries and our larger non-manufacturing sites, great progress has been made to implement ISO 9001 with 66% of designated locations having achieved certification this year and the remainder due in early 2019. These improvements have been accelerated by utilising in-house expertise in quality management systems from nearby sites that already hold ISO 9001, which has provided superb development opportunities for our personnel to extend their skills and abilities into different operations.

This networking has ensured that our systems are now more integrated and standardised across the Group, aiding delivery of excellent and consistent levels of customer service. Further work on integration of our sites' quality systems will continue through internal initiatives in 2019 and beyond.

Our drive to utilise the plan-do-check-act cycle to drive improvements in operational efficiencies continues, with several existing processes and ways of working being reviewed and revised. New approaches based on quality risk assessments are being designed and implemented to aid these enhancements. Our objective is to ensure we are a trusted and reliable supplier to our customers.

## Health, Safety & Wellbeing



### Behavioural Safety

In 2018, all sites completed full implementation of our Behavioural Safety Programme. In addition, all line managers and supervisors involved in performing regular behavioural safety observations have given feedback and, based on their evaluation of risk in their respective workplace, improvement areas have been identified. Although focused primarily on our manufacturing sites, many also included consideration of laboratory operations and office safety and trained people working in those areas as observers in the Programme. Highly flexible, the Programme can be deployed across all sites, regardless of size and complexity, and is managed by a multi-disciplinary team on each site.

With the sponsorship of our Group Chief Executive, Steve Foots, in 2018 we also introduced our own Safety Leadership Improvement Programme (SLIP). This behaviour modification programme focuses on management and leadership behaviours, rather than frontline activities. It is built around a model for safety-related behaviours based on the four themes of standards, risk management, involvement and communication.

Although the model itself is applicable to all levels in an organisation's structure, at the global leadership conference attendees identified the critical behaviours that are specific to senior leaders in the company and agreed how they might be measured. Senior leaders now monitor their own activities and report their successes and failures back to the Executive Committee on a quarterly basis. This enables us to track progress and identify where more specialist advice and guidance might be appropriate. Further work to expand the use of the model to other levels in the organisation is already planned for 2019.

Led by the team at our Thane manufacturing site in India, the same behaviour modification model was used in employee annual appraisals at all levels, with feedback given to help them improve their performance, and other training and development needs identified. The scheme devised at Thane has subsequently been adopted by a number of other sites in the Asia Pacific region.



Thane's 'Manan' room

Our Total Recordable Injury Rate (TRIR), which is the number of recordable injuries for every 200,000 hours worked, has increased slightly to 0.72, from 0.71 in 2018. However, we are confident that we will meet our 2020 target of 0.6 as these behavioural safety programmes begin to show positive results through changes in employee behaviour.

During 2018 our Group SHE team hosted three regional SHE Managers' conferences last year: in Europe, the Americas and Asia Pacific. The established site SHE Managers also welcomed representatives from our newly acquired companies, including Enza Biotech, IonPhasE and Plant Impact, as well as from our non-manufacturing sites including sales offices, warehouses and laboratories. Attendees held workshops on topics including environmental management, health and wellbeing, process safety, changes in safety management system standards, the Behavioural Safety Programme and warehouse traffic management.

### Wellbeing

We take our responsibilities to protect and enhance the wellbeing of everyone in the Croda family very seriously and in 2018 we developed many new initiatives in this area. Most of our operations ran campaigns to encourage healthy eating and exercise. The January pedometer challenge at our Global Headquarters, Cowick Hall, in the UK was a highly competitive event with participants averaging 11,359 steps a day. This has now become a regular feature of the Cowick Hall calendar.

All of our operations across the globe participated in World Mental Health Day and International Stress Awareness Day, held in October and November 2018, respectively. Programmes varied across each location, but many sites introduced yoga, aromatherapy and meditation sessions as ways of encouraging relaxation and promoting wellbeing. Some sites teamed up with external agencies to offer tips on how to deal with stress and help managers to identify stress in their teams.

Thane, our manufacturing site in India, provided training on a whole range of mental health topics supporting managers to identify and deal with issues as they arise. The site also established a new quiet office space without distractions called the 'Manan' room, meaning contemplation or thinking in Sanskrit. Other sites brought in mental health professionals to talk to employees in groups or one-to-one. Many of these programmes will now continue in 2019.



Employees taking part in Chair Yoga

# Doing the Right Thing continued

## Responsible Business



Our commitment to operating our business and conducting our relationships with third parties in a responsible, transparent and ethical way is embedded in our culture and applies across the entire Croda family.

We seek to meet and extend the requirements of the UK Bribery Act worldwide, and to this end we have a global Anti-Bribery and Corruption Programme that is overseen by our Group Ethics Committee, which consists of members of our Executive team. Reporting regularly to the Board, the Committee promotes the importance of ethics and compliance throughout our business, and is implemented through our global ethics network of colleagues from our finance and legal operations.

In addition, the Programme considers the compliance risk associated with every third party vendor we engage. Our ethics network also meets with all third parties who interact with government agencies on our behalf, in order to ensure that they understand, and have policies in place to meet, our compliance requirements.

Many tools and mechanisms are in place to support the Programme, including online gift registers, whistleblowing hotlines, which have recently been expanded to include external third parties, and an anti-bribery and corruption near miss reporting tool. Online training is further complemented with face to face workshops for managers and those employees whose roles might expose them to higher ethical risks. In 2019, we will launch a new Code of Conduct, which sets out how we expect all employees to behave and includes sections on ethical business behaviour.

Our ethical agenda and commitment are supported by a planned programme of colleague communications throughout the year, with regional and global management also setting the tone as they visit our locations globally. Our annual internal audit programme has a dedicated governance section, with certain operations considered higher risk also benefitting from a peer-review by a member of the ethics network.

### Sustainable procurement

ISO 20400 defines sustainable procurement as: “procurement that has the most positive environmental, social, and economic impacts on a whole life basis.” When practising sustainable procurement, organisations purchase in a way that favours suppliers and products that create positive outcomes for our planet and the global community.

We view our supply chains as an extension of our own operations and require our contractors and suppliers to adopt the same standards and principles. Awareness of supply chain risks has progressed in recent years to the point where it is now an industry expectation that an appropriate level of due diligence is performed in identifying and mitigating these risks. In this context, sustainable procurement is a strategic priority for us and supply chain transparency is an essential part of this. In 2018 we spent time training our global procurement teams to ensure that sustainability is integrated in our procurement processes.

We adopt a risk based approach in engaging with suppliers using methodology based on the supplier’s country of operation and the activity performed to identify highest risk suppliers.

We took the decision in the second half of 2017 to partner with EcoVadis and use their Corporate Social Responsibility (CSR) Rating Methodology. In 2018 we carried out a pilot trial with them targeting our top 100 suppliers by value, plus a further 42 high risk suppliers from across all our regions. This work is currently ongoing, but 50% of the invited suppliers connected with us during the year through the platform.

### Environmental Stewardship: SUSOP® Sustainability Studies

To help ensure sustainability is considered from the very start of new projects, in 2018 we trialled two SUSOP® (SUStainable OPerations) studies for different expansion projects within the business, working with BPE, the UK licence holder. SUSOP® is a new project risk and opportunities approach to sustainability, similar to safety and hazard analysis techniques, such as HAZOP, in the context of engineering design. It is a structured process of multi-disciplinary workshops and supporting analysis conducted at the early phases of industrial projects. At the heart of SUSOP® is a systematic and rigorous step-by-step procedure that ensures critical environmental, community and social issues are identified and then translated into real operating designs and practices that deliver new innovative solutions.

SUSOP® studies align all elements of a project to the Five Capitals Model: Natural, Human, Social, Financial and Manufactured. Sustainability goals can then be set around these five areas. The opportunities and risks associated with each goal are captured, prioritised and used to generate action plans. As sustainability is fundamental to our business strategy (p11), it is important that for any future projects we consider all aspects of sustainability, to ensure that we can meet our current and future corporate sustainability targets. The focus of the two 2018 studies were the new UK warehouse project and expansion at our manufacturing site in Chanac, France. New ideas were generated and, where possible, implemented into the design. In 2019, we plan to carry out further studies across our operations.



Artist’s impression of our new UK warehouse, to be built in Goole, UK.