



SUSTAINABILITY REPORT

THE YEAR AT A GLANCE



Zero

fatality free operations sustained



A\$5,878 million

total sales revenue



A\$372 million

underlying NPAT¹



Over 9,300

verifications of key safety controls



22%

female employment in senior management roles



13%

improvement in customer Net Promoter Score from FY18



Adopted TCFD²

to progressively guide climate-related disclosures from FY20



6%

reduction in operational Scope 1 and Scope 2 greenhouse gas emissions from FY18



A\$1.9 million

invested in local communities equivalent to 0.2% of earnings³



59%

waste diverted from landfill



Over 800

Business Partners screened for ethics and compliance risk

1. Equivalent to profit after income tax expense before individually significant items attributable to shareholders of Orica Limited.
2. Recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD).
3. Earnings represents EBITDA (EBIT before individually significant items plus depreciation and amortisation expense).



CONTENTS

About our business	02
A message from our CEO	04
The way we work	05
FY19 sustainability scorecard	06
FY20 sustainability scorecard targets	07
Engaging our stakeholders	08
Focus on key areas	09
Protecting and developing our people	11
Improving customer outcomes	15
Operating responsibly	17
Minimising our environmental footprint	25
Supporting local communities	33
About this report	36

OUR FY19 REPORTING SUITE

To meet the evolving needs and requirements of a wide range of stakeholders, including our investors, customers, employees, regulators and the community, we present our FY19 Reporting Suite.

Our FY19 Annual Report principally details our financial information while our FY19 Corporate Governance Statement discloses how we have complied with the ASX Corporate Governance Council's 'Corporate Governance Principles and Recommendations – 3rd edition'. These documents are available on our [website](#).

Our FY19 Sustainability Report complements the Annual Report and provides stakeholders with more detailed disclosure on our non-financial performance. This includes performance against our sustainability targets, our approach to material sustainability topics, and how we are managing social and environmental risk while capitalising on new opportunities.

ABOUT OUR BUSINESS



THIS IS ORICA

Since our early beginnings in 1874, we've grown to become the global leader in mining and civil blasting, with operations spanning more than 100 countries. We create, develop and deliver blasting solutions to help miners extract resources more productively while managing their critical risks.

With more than 145 years of experience and innovation behind us, we do this safely and responsibly. We're also focused on finding new ways to reduce our impact on the environment and ensure we make a lasting contribution to communities around our operations.

Our world-leading products and services range from blasting to geotechnical monitoring, mineral processing and ground support across the mining, quarrying, construction, agriculture, oil and gas markets.

We are committed to leading the industry's transformation through digital technologies and automation, realising growth opportunities and delivering long-term value for our shareholders.

Our more than 12,000 employees and contractors drive our performance and ensure our success now and into the future. We work together as one team and are guided by the values of Our Charter.

For more information about our business structure and strategy, please refer to our [FY19 Annual Report](#).

Our contribution to United Nations sustainable development goals

We are committed to playing our part in achieving the United Nations Sustainable Development Goals (SDG). The SDGs in their broadest sense guide our approach to the social, economic and environmental challenges we seek to address.

Our resources are focused on the goals which are most relevant to our business and where we believe we can make the most impact. In FY20 we will undertake an assessment to determine which SDGs best reflect our industry, business strategy, material sustainability risks and our unique digital and technology capabilities.



A MESSAGE FROM OUR CEO



OPERATING A SAFE, RESPONSIBLE AND SUSTAINABLE BUSINESS

I am pleased to report a solid performance across our sustainability commitments in FY19.

Maintaining our licence to operate is based on the expectation that we operate safely and responsibly. As the relationship between business and sustainability continues to evolve, our ability to maintain stakeholder trust is increasingly tied to how we manage, improve and disclose our environmental, social and governance performance.

That's why issues including safety, health, environmental protection, product security, climate risk, diversity and ethical conduct are Board-level topics at Orica. These are our most material sustainability issues and where we have the capability to make a meaningful impact.

Our approach to sustainability is based on understanding the issues of concern and responding openly and transparently to embed sustainable practices in our products, services and the way we run our business. This is allowing us to create a more resilient company that is aligned to our values, commercial strategy and the expectations of our people and stakeholders.

Ensuring our people return safely to their families every day is our top priority and in FY19, our operations were fatality free. This result reflects our relentless and targeted approach to fatality prevention. Our Serious Injury Case Rate did rise slightly, however an increased focus on our major hazards resulted in a decrease in the severity of injuries.

While we improved our manufacturing productivity in FY19, the efficiency with which we consumed natural resources such as water remained steady or did not improve to the same degree. As customer demand for our products is continuing to rise, we remain focused on reducing our environmental impact and have identified several new opportunities to reduce water and waste at our major sites.

In FY19 we met our emissions intensity target, delivering a six per cent reduction in operational greenhouse gas emissions. This was a result of our continued efforts to implement and

trial emissions abatement technology at our major ammonium nitrate manufacturing sites. Trials will continue into FY20 as we seek to define a viable emissions abatement pathway in which we can confidently invest for the next decade. We also updated our Climate Change Policy in response to a review of our actions and commitments.

We recognise that stakeholders expect clearer corporate disclosure on climate change. Commencing in FY20, our ongoing assessment and disclosure of climate risks and opportunities will progressively be aligned to the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

While we continue to make a significant social and economic contribution to our host communities, we will refresh our approach to community investment in FY20. Our goal is to ensure our financial and organisational capabilities are more effectively leveraged to deliver a greater social impact.

As always, our people drive our performance and ensure our success now and into the future. In our organisational health survey, we saw a one-point improvement over the last year, representing a six-point increase from our results in 2016. As a truly global company, we also know that an inclusive and diverse workforce is a great strength. In FY19, female representation in senior management rose to 22 per cent keeping us on track to meet our goal of 25 per cent by 2020.

Finally, I would like to thank our more than 12,000 employees and contractors for their hard work and commitment to ensuring we operate a safe, responsible and sustainable business.

Alberto Calderon
Managing Director and CEO

THE WAY WE WORK

At Orica, we're transforming drill and blast through technology to make mining safer and more efficient. We do this by bringing together the best people, high quality products and services, safe, secure and reliable supply, and unmatched technology that creates value for our customers. However, it is our values and behaviours that create the culture we need to drive our long-term success.



OUR VALUES



Safety is our priority. Always

The most important thing is that we all return home, safely, every day.

- We care and take accountability for everyone's safety and wellbeing, including our own.
- We recognise the risks we face in our work and follow all safety controls.
- We speak up when we see hazards or causes of potential harm.



We respect and value all

Our care for each other, our customers, communities and the environment builds trusted relationships.

- We treat everyone fairly, with dignity and we value diversity.
- We work with our local communities to contribute positively.
- We find ways to minimise our impact on the environment in all our actions.



Together we succeed

Collaboration makes us better, individually and collectively.

- We freely share information and ideas with our colleagues.
- We are a team. We take accountability and responsibility for our team's performance.
- We partner with our customers for a better understanding and result.



We act with integrity

We are open and honest, and we do what is right.

- We are transparent in all our communications.
- We always demonstrate ethical conduct and sustainable practices.
- We are trusted because we do what we say we will.



We are committed to excellence

We take accountability for our business and for delivering outstanding results.

- We bring our best effort every day and trust our colleagues to do the same.
- We understand our tasks and how we contribute to Orica's overall success.
- We look for ways to deliver higher performance and adapt swiftly to changing needs.

FY19 SUSTAINABILITY SCORECARD

Sustainability Topic	Metric	FY19 target	FY19 performance	Target status
Protecting and developing our people				
Workplace safety	Fatalities (Number)	0	0	●
	Serious Injury Case Rate	0.17	0.21	●
	All Worker Recordable Case Rate	0.38	0.63	●
	Distribution incidents under Orica control (≥ severity 2) (Number)	≤ 3	1	●
	Distribution incidents under contractor control (≥ severity 2) (Number)	≤ 8	6	●
Our people	Women in Senior Management ¹ (%)	25 by end of 2020	22	●
	Retention of Key Talent ² (%)	> 90	98	●
	Ethnic and cultural diversity in Senior Management ¹ (%)	In line with Orica's revenue profile outside Aust/NZ	45	●
Operating responsibly				
	Product security incidents (≥ severity 3) (Number)	0	0	●
	Ethical and compliance monitoring	Implement assurance framework in 10 countries	Implemented in 10 countries	●
Minimising our environmental footprint				
	Environmental incidents	0	0	●
	Total waste generated	Reduce by 5% against FY18 levels	Reduced by 2.3%	●
	Freshwater consumption intensity (kl/tonne)	1.50	1.57	●
	Greenhouse gas emissions intensity (tCO ₂ -e per tonne AN product sold; Scope 1, 2 and 3)	1.95	1.75	●
	● Target achieved			
	● Not achieved			

1. Senior Management refers to positions banded from A to C, excluding people with legacy banding due to restructures.
2. Key Talent refers to positions banded from A to C, excluding people with legacy banding due to restructures.

FY20 SUSTAINABILITY SCORECARD TARGETS

Sustainability Topic	Metric	FY20 target
Protecting and developing our people		
Workplace safety	Fatalities (Number)	0
	Serious Injury Case Rate	0.18
	All Worker Recordable Case Rate	0.57
	Distribution events (≥ severity 2) ¹ (Number)	≤ 6
Our people	Women in Senior Management ² (%)	25
	Retention of Key Talent ³ (%)	> 90%
	Ethnic and cultural diversity in Senior Management ² (%)	In line with Orica's revenue profile outside Aust/NZ
	Board gender diversity ⁴ (%)	≥ 30%
Operating responsibly		
	Product security events (≥ severity 3) (Number)	0
	Implement ethics and compliance monitoring assurance framework	Further implementation in 10 countries
Minimising our environmental footprint		
	Environmental events (≥ severity 3) (Number)	0
	Total waste generated	Reduce by 2% against FY19 levels
	Potable water consumption intensity at Orica's material consumption sites (kl/tonne) ⁵	0.71
	Greenhouse gas emissions intensity (tCO ₂ -e per tonne AN product sold; Scope 1, 2 and 3)	1.80
Supporting local communities		
	Community events (≥ severity 3) (Number)	0

1. Distribution incidents under Orica and/or our contractors' control.
2. Senior Management refers to positions banded from A to C, excluding people with legacy banding due to restructures.
3. Key Talent refers to positions banded from A to C, excluding people with legacy banding due to restructures.
4. Consistent with Recommendation 1.5, Corporate Governance Principles and Recommendations 4th Edition, February 2019.
5. New metric for FY20, see page 26.

ENGAGING OUR STAKEHOLDERS

Every day we interact with many different stakeholders including employees, investors, customers, communities, suppliers, governments, regulators and media.

Our approach centres on understanding the issues of concern and responding openly and transparently to any questions raised about our products, services and the way we run our business. By actively engaging and partnering with our stakeholders we can strengthen our competitive advantage and ability to innovate.

To understand which issues are important to the business and our stakeholders and where and how to focus our engagement,

we use a sustainability materiality assessment. By defining the needs and interests of our stakeholders we continue to evolve our strategy, ensuring we better meet their expectations and focus our reporting on the issues they care about.

Many of our major operations use formal stakeholder planning and engagement approaches. Stakeholder Plans guide effective engagement by documenting the status of key stakeholder relationships, past and current issues, opportunities, and decisions around future engagement and community investment activities.

Table 1: How we engage with our most important stakeholders

Stakeholder	Concerns and interests	Examples of engagement strategies
Employees and contractors	Career and development opportunities, performance management and senior leadership.	Direct engagement at Company work locations; intranet; regular internal written and/or face to face communications about changes that could impact employees; leadership forums; leadership development programs; internal workshops and conferences; company-wide employee engagement survey (conducted in FY19).
Customers	Performance of product, cost, reliability of supply, ability to add value to customer performance, sustainability impacts of products and services.	Direct engagement, including commercial and contract negotiations and extensive interactions as part of our customer engagement initiatives; the Voice of the Customer program measuring Net Promoter Score and customer verbatim; Customer Innovation Centre events; customer technical workshops; presentations at industry events, forums and conferences.
Suppliers and business partners	Performance of product, cost, reliability of supply, sustainability impacts of products and services.	Direct engagement; supplier engagement processes; supplier questionnaires; regular meetings with joint venture partners.
Shareholders, investors and analysts	Company performance, delivery on Company strategy and governance.	Annual general meeting; half-year and full-year results presentations and webcasts; investor roadshow meetings; direct shareholders engagement including site visits, calls and meetings, with feedback to the Board where appropriate. Sustainability performance is disclosed on our website and in our annual Sustainability Report. We report our performance to the Dow Jones Sustainability Index (Materials sector), FTSE4Good Index and the Carbon Disclosure Project. We respond to investor and analyst queries, including ESG (environmental, social and governance) analysts.
Local communities	Employment opportunities, socio-economic contribution to local communities, local operational impacts such as noise, odour, emissions and contamination.	Site-specific stakeholder plans and programs for community contact and information sharing; direct engagement with individuals and key opinion leaders; community investment and partnership programs; posting of employment opportunities on our website; systems to register, investigate and promptly respond to community complaints; community meetings, site visits and tours by local community members including local school groups.
Government and regulators	Regulatory compliance, research and development, socio-economic contribution and local community issues.	Direct engagement with government and regulatory agencies in countries where we operate; written submissions regarding regulatory impact either directly, or via professional groups or industry associations.
Industry associations	Discussions about industry-wide issues and strategy, seeking input into industry association responses to government consultations.	Direct engagement with industry associations; contributions to research and written submissions regarding regulatory impact or policy; participation in working groups; attendance at events and conferences.
Non-government Organisations (NGOs)	Business corruption, sustainability performance.	Direct engagement with representatives from NGOs including organisations such as Transparency International of which we are a member.
Media	Company performance, energy security and affordability, corporate governance.	Direct engagement with representatives from print, radio, TV, social and online media at local, national and international level.
Research, university and technical institutions	Research, innovation, partnerships.	Direct engagement and partnerships with representatives from universities, co-operative research centres, government research agencies, start-up businesses.

FOCUS ON KEY AREAS

We operate a complex and dynamic global business with a broad range of stakeholders and an extensive supply chain.

The world in which we operate is constantly changing as industries are disrupted by new innovations and technology. The UN Sustainable Development Goals (SDGs) are reframing how stakeholders address sustainability and interest in our non-financial performance is growing.

To keep pace with this evolving context and align to best practice, we conduct periodic sustainability materiality assessments informed by the Global Reporting Initiatives (GRI) Standards.

Our materiality assessment is a process designed to identify the most important sustainability issues, opportunities and risks for our business through two lenses:

- the importance of these issues to our stakeholders; and
- their impact on our business (both negative and positive).

Figure 1 shows our materiality process. The output at Table 2 shows the main issues material to our business.

In FY19 we updated our materiality assessment. Our review has highlighted several new areas of importance relating to energy markets, increasing industry disruption, innovation and technological disruption and cyber security, which are included in our FY19 disclosures. Other sustainability topics remain largely consistent with materiality assessments from previous years.

Figure 1: Our materiality process

IDENTIFICATION

- Review relevance of previous materiality assessments
- Internal mechanisms (e.g. direct feedback, Group policy, material risks)
- External frameworks (e.g. GRI)
- Global and market trends

PRIORITISATION

- Assessment of topic importance, frequency of exposure
- Prioritised themes identified for validation

VALIDATION

- Internal management review and validate themes
- Input from senior leaders and Board Audit and Risk Committee

REVIEW

- Direct stakeholder feedback on report
- Findings presented to functional business areas (e.g. Risk, SHECS, Human Resources, Corporate Affairs)

Detailed information on these topics, as well as how we are managing them, can be found throughout this Report. For our material topics and their boundaries please see our [GRI Index](#).



FOCUS ON KEY AREAS

Table 2: Our sustainability themes and material topics

BUSINESS PERFORMANCE	OPERATING RESPONSIBILITY	PROTECTING AND DEVELOPING OUR PEOPLE	MINIMISING OUR ENVIRONMENTAL FOOTPRINT	SUPPORTING LOCAL COMMUNITIES
<ul style="list-style-type: none"> Economic performance 	<ul style="list-style-type: none"> Corporate governance 	<ul style="list-style-type: none"> Health and safety 	<ul style="list-style-type: none"> Environmental risk and compliance 	<ul style="list-style-type: none"> Customer and community health and safety
<ul style="list-style-type: none"> Customer experience 	<ul style="list-style-type: none"> Ethical business conduct 	<ul style="list-style-type: none"> Corporate culture 	<ul style="list-style-type: none"> Greenhouse gas emissions 	<ul style="list-style-type: none"> Community investment
<ul style="list-style-type: none"> Industry and technological disruption 	<ul style="list-style-type: none"> Executive remuneration 	<ul style="list-style-type: none"> Capability and talent attraction 	<ul style="list-style-type: none"> Resource efficiency (energy, water, waste) 	<ul style="list-style-type: none"> Stakeholder engagement
<ul style="list-style-type: none"> Energy security and affordability 	<ul style="list-style-type: none"> Human rights and supply chain 	<ul style="list-style-type: none"> Diversity and inclusion 	<ul style="list-style-type: none"> Climate change resilience 	<ul style="list-style-type: none"> Sustainability as a driver of innovation¹
<ul style="list-style-type: none"> Business resilience 	<ul style="list-style-type: none"> Product security and responsibility Cyber security Tax transparency 			

1. Leveraging our employees to create new or improved products, services, technologies and business models that produce environmental or social benefits along with economic value.
 2. Highlighted indicates new material topic in FY19.

PROTECTING AND DEVELOPING OUR PEOPLE

FY19 HIGHLIGHTS

-  **Fatality free operations**
-  **6-point improvement in organisational health score since 2016**
-  **22% women in senior management, up one per cent from FY18**
-  **Increased focus on serious injuries with introduction of new Serious Injury Case Rate metric**
-  **Continued integration of our Global SHES Management System into operational sites**
-  **Over 9,300 verifications of key safety controls**
-  **\$170,000 donated to 12 charities through matched payroll giving**



Our Chief Executive Officer (CEO) and Executive Committee are accountable for performance against SHES targets. The Orica Board Safety, Health, Environment, Community and Security (SHECS) Committee meets at least quarterly and undertakes site visits to review performance against targets, monitor implementation of SHES initiatives and programs, and consider material SHES issues. The SHECS committee is informed by the SHES assurance program, which provides insights into compliance with the SHES Management System including applicable SHES legal requirements.

PROGRESS IN FY19

Our relentless focus on fatality prevention remains a key priority. During the year we continued to build the capacity of our frontline leaders through coaching and training. Our safety leadership interactions doubled from last year with leaders performing over 45,000 safety interactions in FY19. These interactions are a practical way to live and demonstrate Our Charter values.

Our strategic focus on major hazards continues with the aim that our key controls are 100 per cent effective, 100 per cent of the time. No fatalities were recorded in FY19 and this remains our priority in the future.

Safety performance

We revised our SHES performance targets this year to increase our focus on serious incidents.

A new metric, Serious Injury Case Rate (SICR), was introduced to record personal injury or illness that result in a lost work day or permanent injury or illness. This allows us to focus on causes and characteristics of serious injury events.

While there was a reduction in injury severity, our SICR performance did not meet our FY19 target. This can be attributed to awareness and promotion activities resulting in improved rates of injury reporting.

Our All Worker Recordable Case Rate (AWRCR) did not meet target, however the severity of injuries, and as a consequence rate of lost work days, reduced from FY18.

In FY20, a targeted program will be implemented to reduce the number of serious and recordable injuries in those parts of our business which have high injury rates.

Transport safety is one of our material risks. This is managed through regional initiatives guided by a global distribution expert panel that governs driver training, equipment specification and emergency response. During the year, transport and distribution events reduced within the network controlled by Orica and involving third-party contractors.

Our SHES assurance program helps us ensure required controls are in place and operating effectively, identify and share best practice, and communicate lessons learned across the organisation. During the year, our teams performed a range of assurance activities including site self-assessments, regional assessments and corporate audits. Corrective actions identified during these audits are monitored for implementation to prevent reoccurrence.

We continue to promote the reporting of serious and high potential injury events. These insights inform the development of enhanced safety measures and controls.

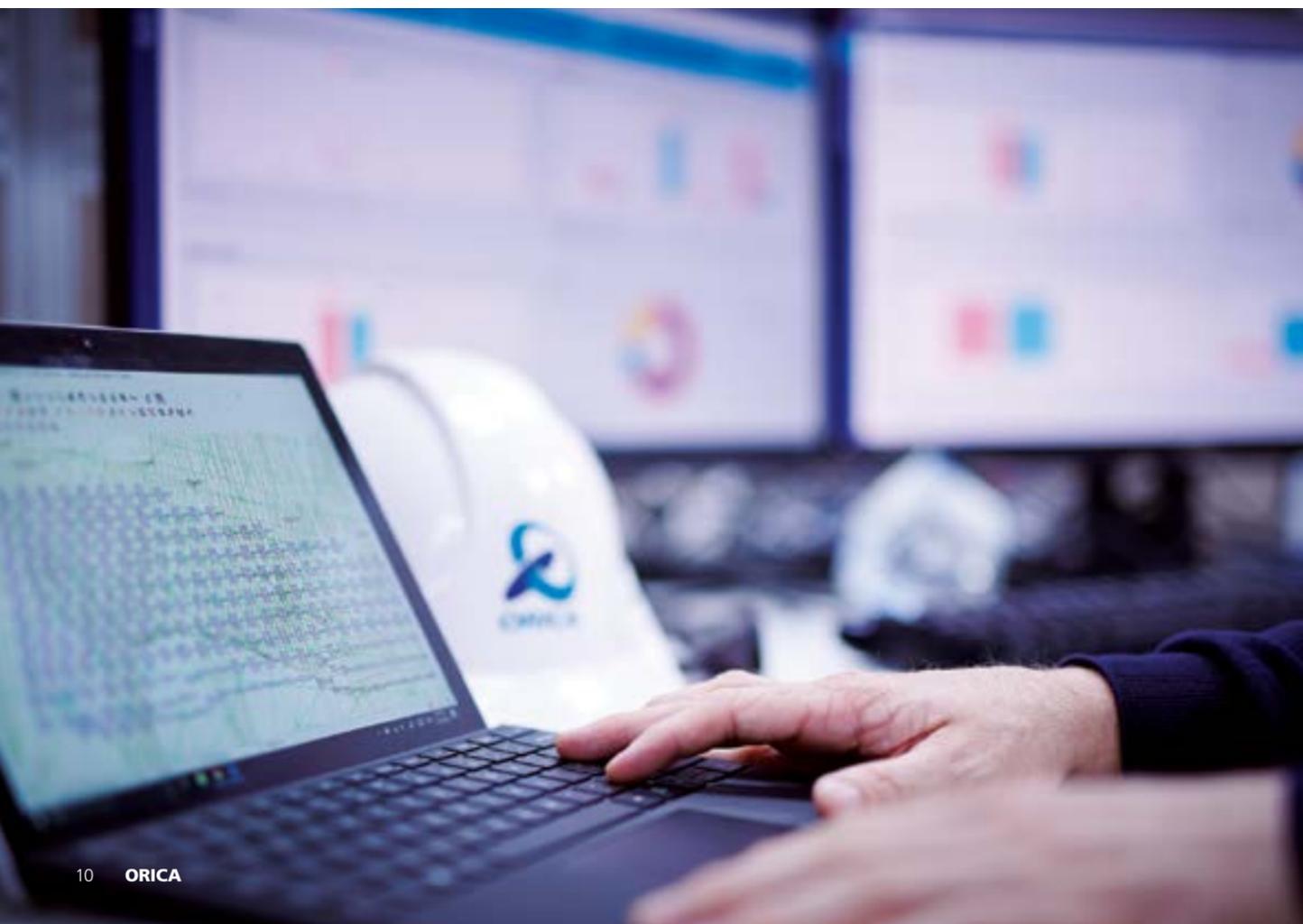
WORKPLACE SAFETY

OUR APPROACH

Nothing is more important than keeping our people, customers and communities safe. We maintain a relentless focus on preventing injury and illness and improving how we manage health and safety risks across our business.

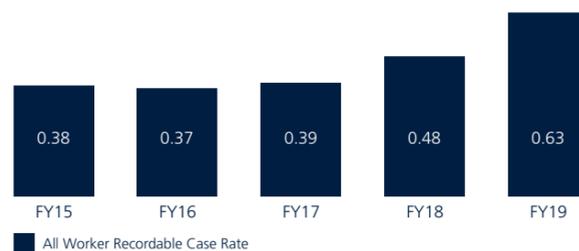
Our Safety, Health and Environment Policy affirms our aspiration to avoid harm, empower our people to safely and responsibly perform their tasks, and continually improve our performance.

To guide our people in avoiding injury, illness or environmental harm we define a range of performance requirements in our Safety, Health, Environment and Security (SHES) Management System. Our SHES Group Standards and supporting procedures outline the systems, process and controls that must be in place to protect our people and the environment.

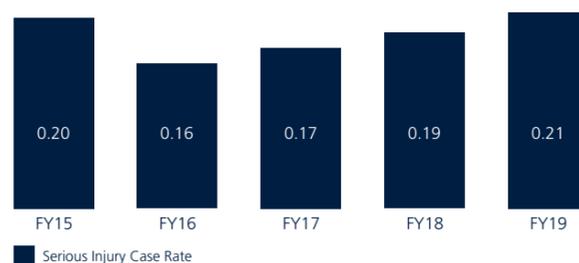


PROTECTING AND DEVELOPING OUR PEOPLE

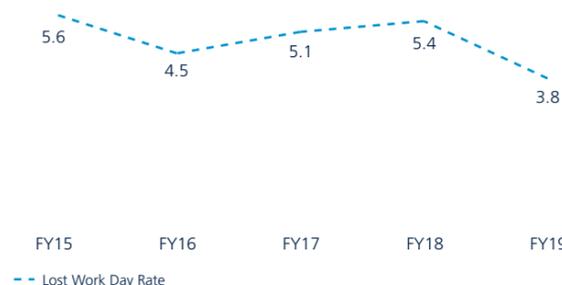
All Worker Recordable Case Rate



Serious Injury Case Rate



Lost Work Day Rate



Major hazard management

The Major Hazard Management (MHM) program is designed to identify, mitigate and manage potential hazards, in order to ensure our people return home safely at the end of each day. In FY19, we launched a global pilot to strengthen our hazards and key control verification process. More than 9,300 key control verifications were performed as part of the pilot program. Following the success of the pilot, we will commence global implementation of the MHM program in FY20.

Occupational health performance

We have a responsibility to protect the long-term health of our people in collaboration with our customers. Where appropriate, we perform routine and periodic health surveillance to detect signs of potential illness at an early stage.

To better understand and strengthen controls for our most important health risks, in FY19 we developed and validated a Trinitrotoluene (or TNT) biomarker for managing the health of operators working with TNT. Routine monitoring of this new biomarker will commence in FY20.

During the year, two employees were confirmed with cases of Mine Dust Lung Diseases (MDLD). One case was identified through the Queensland Coal Mine Workers Health Scheme and the other case through Orica's routine health surveillance in Chile. The impacted employees were provided with medical support, counselling and assistance with compensation processes. To strengthen our approach, we have reviewed our occupational health monitoring program and identified several priority actions:

- review our internal Occupational Exposure Limits in line with emerging scientific literature, regulatory changes and benchmarks established by our customers;
- incorporate chronic harmful substances into our Major Hazards Management program to ensure ongoing and effective verification of controls; and
- review and ensure effective monitoring of respiratory health, including early identification of MDLD against international standards.

PRIORITIES AND FOCUS FOR FY20

- Continue to promote and enforce safety leadership behaviours that drive collaboration, felt and effective leadership.
- Implement and embed our Major Hazard Management Program globally.
- Refine and embed the SHES Management System globally.

IMPROVING SAFETY THROUGH INNOVATION AND TECHNOLOGY

Innovation is delivering advances in safety, productivity and environmental outcomes. The convergence of new technologies is enabling us to think differently, operate more precisely and, most importantly, remove people from harm's way.

WebGen™ uses wireless technology to initiate blasts through rock, water or air from surface control rooms. With the manual task of connecting down-lines and surface wires removed, our customers can improve productivity and keep their people safe.

We are also working to automate the explosives loading process. The initial phase is underway and will see us make our Mobile Manufacturing Units (MMU™) completely self-reliant by 2021.

Our strong track record of innovation and longstanding commitment to research and development investment was recognised in FY19 with the Austmine METS Innovation Award for WebGen™.

ORGANISATIONAL CULTURE AND WORKFORCE CAPABILITY

OUR APPROACH

Engaged, diverse and highly capable people are integral to delivering our business strategy. To enable this, we apply a systematic approach to managing our people globally while adhering to local legislative and regulatory requirements. Minimum performance standards are outlined in our policies, group standards and relevant procedures.

A key enabler of our operating model is the introduction of our multi-year SAP system. The human resources module was released in FY18 providing access to standard, global, performance management, learning and expense management processes and systems. This new self-service way of working has enabled our people (during FY19) to take greater ownership and accountability for their role and professional development.

Our Human Resources and Compensation Committee monitors progress against key strategic objectives within remuneration, culture and diversity. Our Executive Committee meets at least twice a year for dedicated "People Days" to advance the global talent and capability agenda. Senior human resources executives also meet regularly to monitor execution of our People Strategy. This systematic approach ensures a clear alignment of our global strategy through to execution at a local level.

PROGRESS IN FY19

Culture and engagement

Over the past three years, we've built a leaner, more resilient business and embedded the systems and processes needed to deliver growth, reliability and sustainability. A positive, engaged culture at all levels has been key to the transformation.

In FY19, we undertook our third organisational health survey with a participation rate of 82 per cent, up from 60 per cent in 2016. Feedback is helping inform our progress in cultural transformation and indicates we have a more engaged workforce.

We made significant progress since 2016:

- six-point increase in our global health score (61 to 67) outperforming globally benchmarked peers.
- maintained or improved organisation health across most business regions and functions.

The results were communicated across the business and we continue to seek employees' input into improvement action plans.

STRENGTHENING OUR CULTURE THROUGH CODE OF BUSINESS CONDUCT TRAINING

Our people have a responsibility to uphold the standards and values we represent. During FY19, we further integrated our Code of Business Conduct by implementing mandatory awareness training.

To enable access for every employee and contractor, the training was designed in 13 languages via offline and online channels. Topics included speaking up, conflicts of interest, safety, use of assets or equipment and handling confidential information and environmental protection. The learning was deployed using Orica's integrated Learning Management System (LMS) to provide simple access and robust record management.

The awareness training is now incorporated into all new starter on-boarding training requirements to ensure that expectations of our people are clearly communicated and understood. For more information on the outcomes of our Code of Business Conduct training refer to the Operating Responsibility section of this report.

Diversity and inclusion

By bringing people of different genders, ages, ethnic and cultural backgrounds together and giving them the opportunity to apply their skills, experiences and perspectives, we create value for our business and customers. Our people's diverse set of experiences, perspectives, and backgrounds is crucial to innovation and the development of new ideas.



PROTECTING AND DEVELOPING OUR PEOPLE

We continue to implement our Diversity and Inclusion Strategy (2018 – 2020) and remain on track to deliver our 2020 strategic goals.

In FY19:

- 22 per cent of senior leadership positions were held by women, up from 21 per cent at the end of FY18;
- Ethnic and cultural diversity remains strong with 45 percent of senior leader positions held by people who identify their nationality other than Australian or New Zealand. This is slightly lower than FY18 as a result of organisational restructuring but remains aligned to Orica's revenue profile;
- 41 per cent of graduates are women (up from 35 percent in FY18); and
- 37 per cent of our Board are female.

Our Human Rights at Work and Diversity and Inclusion policies protect peoples' workplace rights. In FY19, 33 per cent of our people were part of collective bargaining agreements.

Reflecting our diverse operations, 81 per cent of the global workforce is based outside Australia and New Zealand. Contractors make up 12 per cent of the total workforce. During FY19, turnover was 15 per cent, with the majority due to business structuring.

Workforce capability

During FY19, we continued to build critical capabilities that will help deliver our business strategy with a focus on creating pipelines of high calibre, diverse talent for senior management, commercial and technical positions.

In FY19 we:

- embedded our talent management processes deeper and more broadly across the organisation to leverage our globally integrated human resources systems. We can now identify future talent and build succession plans in a more consistent and robust way;
- delivered our flagship Enterprise Leaders Programme (ELP) targeting a cohort of 13 high potential senior managers identified as future executives. This takes the total number of ELP participants to 39 since inception;
- grew our graduate program to over 70 participants globally. The program is building a diverse pipeline of talent, with ethnic diversity from over 19 different nationalities; and
- invested in building our commercial and technical capabilities to support our growth strategy. Through innovative learning techniques and virtual classrooms, we are enabling efficient and effective learning at scale to accelerate the development of technological capabilities.

In FY19 we achieved our target of retaining above 90 per cent of our key talent within our senior management, improving slightly on last year. The ongoing implementation of our operating model and executive recruitment to strengthen our people and technology capabilities also resulted in a retention rate of 85 per cent.

We also reached a critical milestone in our global learning transformation in FY19, with most of our organisation now able to access an online Learning Management System. This has enabled more efficient delivery of training, more robust record management and greater compliance transparency.

PRIORITIES AND FOCUS FOR FY20

- Refine our future organisation of work to enable the 'new ways of working' unlocked through our digital transformation program.
- Continue our progress towards meeting our FY20 gender diversity target.
- Refresh our People Strategy to drive and inspire organisational performance for the future.

VOLUNTEERING AND PAYROLL GIVING

Our employees are passionate about their local community, giving generously of their time and making financial contributions to causes close to their hearts.

Through our Dare to Share matched payroll giving program, employees can donate to registered charities. In FY19, two per cent of our employees made donations via payroll giving resulting in nearly \$170,000 being donated to 12 charities.

We also convene a Graduate Sustainability Committee within each of our operating regions. During the year, our graduates participated in numerous volunteering and community support initiatives. Involving our employees in these programs helps build positive culture, engagement and more productive workplaces.

Our existing payroll giving and volunteering initiatives are not universally available in all our operating regions. In FY20 we will review our volunteering and payroll giving programs with the aim of increasing access and participation over time.

DARE TO SHARE EMPLOYEE GIVING



12 charities benefiting from 1:1 matched employee donations



\$170k helping charities to deliver more

IMPROVING CUSTOMER OUTCOMES

FY19 HIGHLIGHTS



13% improvement in NPS on FY18 levels



Launched MonitorIQ™



CREATING A CUSTOMER FOCUSED BUSINESS

To ensure we deliver value to our customers, more than 100 area and territory business managers across our four main geographical business regions are accountable for understanding their needs and commercial outcomes.

The experience of our customers, our plans to continually improve, and the results of our customer surveys are strategic metrics for our business. Our Executive Team review customer experience on a monthly basis and continually work to identify initiatives to improve customer experience at the global and local level.

IMPROVING CUSTOMER ADVOCACY

We measure customer experience using the Net Promoter Score® (NPS) system. NPS enables us to measure our customers' experiences, overall satisfaction and quickly respond to their feedback.

Surveys are conducted monthly, providing an ongoing measure of performance against aspects such as safety, product quality, supply reliability, technology, ease of doing business and overall value for money.

In FY19, we achieved a 13 per cent improvement in NPS on FY18 levels. With our implementation of SAP (Orica's 4S program) across our customer management processes, our ability to engage, understand customer feedback and analyse data is improved. We continue to focus on customer improvement initiatives such as product rationalisation and commercialising new technology. Getting customer service basics right is integral to the success of our customers and our business.

Our customer strategy is to develop strategic and enduring partnerships that deliver safer, more efficient and productive blasting outcomes and value-added services. These customer benefits are enabled by our investments in technology that optimise the blasting process through wireless detonation, automation and digital platforms.



IMPROVING CUSTOMER OUTCOMES

IMPROVING CUSTOMER OUTCOMES THROUGH TECHNOLOGY

We continue to invest in digital technologies and automation on a global scale.

WebGen™, the industry's first and safest truly wireless initiating system is now being commercialised. This is a significant development for the industry, providing material improvements in safety and productivity during the blast cycle.

"We see WebGen™ technology as a game changer that is enabling us to lead the industry in block cave mine design and planning."

Rob Cunningham, Mining Operations Manager, CMO Northparkes Mines.

Our drilling blast optimisation platform, BlastIQ™, provides mine management with a fully integrated data management and learning system. The platform captures real-time and post-blast data to optimise blast design, improve execution in the field and enable improvement across the value chain.

We are also building multiple capabilities that provide monitoring and measurement services for our customers. To complement our suite of digital technology solutions, in FY19 we launched our new data aggregation software for monitoring, MonitorIQ™. The platform brings all mining pit sensor data together in one place, revolutionising how our customers compare, contrast and view data in real time.

SUSTAINABILITY DRIVING NEW INNOVATION

Technology has the power to enable innovative solutions for today's social and environmental challenges. Our advances in technology offer new ways to collect data about every aspect of blasting ensuring our customers can make informed, data-driven decisions. This is reducing environment and social impacts, increasing productivity and profits, and improving safety outcomes.

Our ENVIROTrack™ digital solution monitors, measures and controls a range of potential environmental impacts in surface and underground mining, quarry and construction applications. The technology measures impacts to the ground and air, including vibration, noise, air-blast, dust, wind speed, air temperature, air humidity and rainfall. Communicating continually with field sensors, measurement data is automatically sent to our BlastIQ™ Platform, providing near real-time insights to manage regulatory compliance and community expectations.

PRIORITIES AND FOCUS FOR FY20

- Deliver superior customer service.
- Improve our customer experience score (NPS), in part by:
 - further simplifying our global product portfolio; and
 - continuing to develop new blasting and digital technologies to enhance customer outcomes.

PRODUCT RESPONSIBILITY

We provide our customers with safe and secure products and services they can trust. For information about our approach to product security see the Operating Responsibly section of this report.

CASE STUDY

TECHNOLOGY HELPING SOLVE ENVIRONMENT AND SOCIAL CHALLENGES

During the year, our technology played an important role in delivering innovative solutions to social and environmental challenges caused by tailings dam collapses.

In Brazil, where significant tailings failures have occurred at several highly publicised sites, our GroundProbe™ business is helping monitor the continued stability of the dams and ensure safety (note, GroundProbe™ was not in place before or during the collapses). GroundProbe™ radars and lasers are also monitoring several tailings dams around the world in a precautionary capacity.

"Our radar operators unanimously agree that GroundProbe's™ high quality software solution, SSR-Viewer, is unparalleled in terms of analysis and interpretation of slope monitoring data. GroundProbe™ is not just a provider, but a partner."

Samuel Ricardo Carvalho Carneiro, Geologist, Samarco Mineração S.A.



OPERATING RESPONSIBLY

FY19 HIGHLIGHTS

 **Established an ethics and compliance monitoring and assurance program**

 **Over 800 Business Partners assessed for ethics and compliance risk**

 **Implemented training in our new Code of Business Conduct**

 **\$107m paid in income tax**



Each function's role is articulated in a Group Function Mandate. The functions are responsible for the Group strategy and documents – the policies, standards and procedures that govern Orica. These documents provide the foundation for the group operating as one organisation across our global network, with common processes and systems. The operating model is designed to provide balance between empowering teams with the freedom to deliver on their accountabilities, while providing the framework to drive consistency and simplicity.

In FY19, compliance with these mandatory standards was assessed through a formal self-assurance process.

DISCLOSURE OF POLITICAL DONATIONS

While we do not make political donations, it is important that we can express our views to Government. This means we sometimes pay fees to attend industry events, such as technical and business conferences that allow discussion on major policy issues which may be attended by elected representatives.

PROGRESS IN FY19

Corporate governance

In FY19 we continued to review our corporate governance arrangements. Key initiatives included:

- establishing an Innovation and Technology Committee to assist the Board in its oversight of our commercialisation of new technology, digital products and performance of our major operational IT projects;
- undertaking a holistic review of the financial and non-financial information provided to the Board and Committees and implementing a revised Board Reporting Framework;
- continuing to bring focus to our governance culture that drives behaviour by further embedding our refreshed Code of Business Conduct; and
- reviewing and updating Board and Committee Terms of Reference in preparation for meeting the updated Fourth Edition of the ASX Corporate Governance Council's Corporate Governance Principles and Recommendations (ASX Recommendations).

For more information refer to our [FY19 Corporate Governance Statement](#).

ETHICS AND STRONG GOVERNANCE

OUR APPROACH

Conducting our business with integrity is central to who we are.

We perform our work ethically and responsibly and are guided by our policies, processes and corporate governance structures to uphold these values.

The Board is responsible for oversight, sound management and strategic direction, with specific duties set out in its Charter. For further detail on our governance framework see our [website](#).

We have five standing Board Committees: the Board Audit and Risk Committee; Human Resources and Compensation Committee; Nominations Committee; Safety, Health, Environment, Community and Security Committee; and the Innovation and Technology Committee.

At management level, the Executive Committee comprises our most senior executives. The delegations of authority framework sets out those matters reserved for the Board and those delegated to the CEO and other members of senior management.

Our operating model defines parameters for company performance which are established at Group level. Four regional management teams have accountability for end-to-end customer service delivery and on-the-ground operational and financial performance. Supporting the four regions are a small number of Group functions which maintain functional excellence.

OPERATING RESPONSIBLY

Risk management

Managing financial and non-financial risk is about understanding the uncertainties facing our business. We can then develop strategies to benefit from the risks or minimise their impact on achieving our business strategy and priorities.

Group Risk is responsible for designing the risk management framework, supporting its implementation across the business, and coordinating and aligning risk management activities across the Group.

Material strategic risks are reported to the Board while material operational risks are reported to the Board Audit and Risk Committee. The Safety, Health, Environment, Community and Security Committee has oversight of the material SHES operational risks (within that Committee's remit). Several material business risks that may affect the future financial performance of Orica – including workplace safety, ethical conduct, changing regulation and climate change – are outlined in both this report and our FY19 Annual Report.

In FY19, we considered climate-related risks and opportunities. The outcomes of our review are described in the climate change section of this report.

For more information on our approach to risk management, refer to our [FY19 Annual Report](#) and [FY19 Corporate Governance Statement](#).

Ethics and compliance program

Our ethics and compliance program establishes clear requirements and controls to support compliance with key risks including anti-corruption, trade sanctions and competition (anti-trust) laws.

We provide a range of resources, training, risk assessments and other controls as part of our compliance framework which reflect global best practice and regulatory requirements (e.g. *US Foreign Corrupt Practices Act*, the *UK Bribery Act* and the *Australian Criminal Code*).

Employees can access a multi-lingual online compliance tool. It records incidents, provides notifications and controls approval workflows as required by our Ethics and Compliance Group Standard. Higher risk activities are subject to review and approval by a dedicated ethics and compliance team.

In FY19 we established a monitoring and assurance program in 10 priority countries, selected using a risk-based approach, to assess the effectiveness of our ethics and compliance controls. The results of our assurance program have resulted in several corrective and preventative actions that will be implemented to improve our performance. An additional 10 priority countries will be targeted during FY20.

Key ethics and compliance risks managed by Orica



Trade sanctions



Fraud



Sponsorship and donations



Labour practices



Anti-bribery; Anti-corruption

We have updated our processes for engaging and assessing Business Partners including sales agents, distributors and freight forwarders to manage supplier risk. In FY19 over 800 existing Business Partners were assessed, allowing us to categorise our partners by supply risk. Over the next year we will extend our ethics and compliance assurance program to monitor identified high risk Business Partners.

Responsible conduct

In FY18 we refreshed our Code of Business Conduct and communicated the new requirements to all employees and contractors. The Code includes expectations around compliance with regulations, our values and a broad set of Group policies and standards.

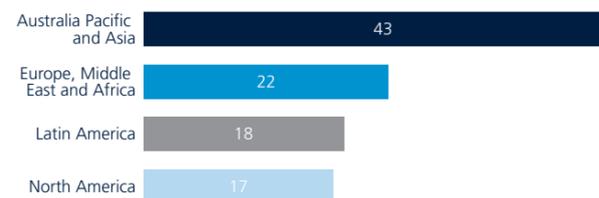
Mandatory training on the Code (which covers key business conduct risks including anti-bribery and corruption, trade sanctions and competition law) was delivered during FY19, ensuring our people are equipped with the knowledge and tools they need to act ethically and responsibly. If a breach of the Code is suspected, employees and contractors can report directly to their line manager or other management teams including Human Resources.

Whistleblower

We encourage our people to disclose work-related grievances, illegal or unethical practices. During the year, new requirements were enacted in Australia for public companies to implement a whistleblower policy. While unethical, illegal or improper behaviour can be confidentially and anonymously reported through our Speak-Up service, our Whistleblower Policy has been updated to reinforce our commitment to encourage and protect those who report. The Policy will be implemented by 1 January 2020 as required by Australian law.

In FY19, 83 per cent of whistleblower reports involved workplace and personnel grievances (including conflicts of interest). The Australia Pacific Asia region accounted for 43 per cent of total global reports.

Reports by geographic region (%)



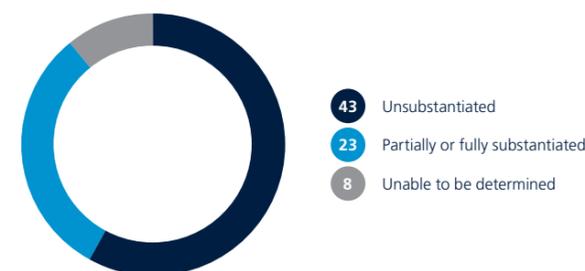
Reports by category (%)



Note: There were zero continuous disclosure, insider trading or confidentiality breaches.

When concerns are raised through our Speak-Up service, the facts are reviewed and a response is determined according to the framework in our Group procedure. In FY19, 23 per cent of reports were partially or fully substantiated. Where allegations were substantiated, appropriate action was taken to remedy and prevent reoccurrence. In some cases, disciplinary action or termination of contract was justified and occurred.

Reports by outcome (%)



Note: All reports are appropriately triaged, and, in some instances, formal investigations cannot be pursued (for example due to lack of information).

Human rights

Our Human Rights at Work Policy articulates our respect for the broad principles outlined in the United Nations Universal Declaration of Human Rights.

We oppose any form of slavery or human trafficking and are committed to maintaining and improving systems and processes to avoid complicity.

We respect and support the rights of our people to a healthy, safe and secure working environment, a workplace free of discrimination and freedom of association. We are also committed to preventing the use of all forms of forced, compulsory or child labour in our operations.

We continue to meet our obligations under the *Modern Slavery Act 2015* (United Kingdom) and will publish our Modern Slavery Statement for FY19 on our [website](#). This statement outlines the steps we have taken during FY19 to prevent slavery and human trafficking in our supply chain or any part of our business.

During FY19 we deactivated approximately 40 per cent of our suppliers thereby enabling us to reduce the risk of human rights violations in our supply chain.

We also strengthened our procedures and tools used to regulate the appointment of all Business Partners throughout Orica. These procedures seek to ensure that all Business Partners are reviewed by the Ethics and Compliance team and are subjected to a level of due diligence and review which is commensurate with the risks associated with the proposed engagements.

On 1 January 2019, the *Modern Slavery Act 2018* (Commonwealth) commenced in Australia. The Act requires all entities based in, or operating in, Australia with annual consolidated revenue exceeding A\$100 million to produce an annual statement. Our first statement is due before April 2021 covering the period 1 October 2019 to 30 September 2020.

We will continue to produce an annual Modern Slavery Statement which will, from next year, jointly fulfil our obligations under Australian and United Kingdom legislation.

PRIORITIES AND FOCUS FOR FY20

- Adopt the new fourth edition of the ASX Recommendations.
- Assess a further 10 priority countries for ethical and compliance risks.
- Implement our updated Whistleblower Policy.
- Deepen our understanding of human rights risks in our business and supply chain and produce our first joint United Kingdom and Australian Modern Slavery Statement.

OPERATING RESPONSIBLY

PRODUCT STEWARDSHIP AND SECURITY

OUR APPROACH

As a manufacturer of commercial explosives and blasting initiating systems, we have specific responsibilities to ensure we partner with, and sell to, organisations that will use our products for their intended purpose. We also have a responsibility to eliminate or minimise any environment, health or safety risks across the lifecycle of our products and services.

While our detailed approach to managing product security remains confidential, key elements include:

- customer screening and vetting;
- site and transport security; and
- ongoing engagement and collaboration with national and international security agencies.

Annual Self-Assessments and Life Cycle Risk Assessments (LCRA) are performed as part of our responsible product stewardship practices and SHES management system requirements. LCRA help ensure our products are used as intended, both safely and ethically, from order and shipment through to end-use and disposal. LCRA are mandatory at the beginning of product development and are maintained by accountable product and services managers.

PROGRESS IN FY19

Strengthening security governance

We continued to strengthen our security governance and management of material supply chain risks.

During the year, the Board Safety, Health, Environment and Community Committee was extended to include security. We established a global security event monitoring and management system to address security-related events. These events are reviewed and subject to meeting materiality thresholds and investigated in consultation with regulatory and security agencies.

Security key performance indicators have been established and are reported monthly to the Executive Committee and quarterly to the Safety, Health, Environment, Community and Security Committee.

Our Product Security Group Standard, which forms part of our SHES Management System, was reviewed and updated during the year. In FY20, we will implement the Standard's performance requirements across our business, and analyse product security events to identify common causes and characteristics to continually strengthen our controls.

Security compliance

No Severity 3 or greater product security incidents were recorded in FY19. We are also not aware of any incidents regarding non-compliance of regulations and voluntary codes relating to the safety and health impacts of our products and services, product information and labelling, or marketing communications.

In FY19, Mexico and India mandated product traceability requirements on explosive articles. While we anticipate more countries will follow their lead, our existing management systems are well positioned to meet these new requirements as we have processes in place to meet existing European Union traceability regulations.

Supply chain management

We regularly engage and work closely with our suppliers to assess whether they meet our minimum safety, environment and social standards and to support improvements where required.

Risks to sustainability in supply chains include labour practices, product security, environmental, health and safety, and bribery and corruption. In FY19 we commenced a formal review of our upstream supply chain with a focus on our procurement of raw materials and inputs. This included ethical conduct and health and safety risks and opportunities. We identified several opportunities to avoid or minimise safety, environment and ethical risks across our supply chain and these will be developed for implementation in FY20.

PRIORITIES AND FOCUS FOR FY20

- Implement the Product Security Group Standard across global operations.

CYBER SECURITY

We implement cyber security procedures to protect our global information network. Our Cyber Security Strategy defines our approach to build a cyber security capability sufficiently capable of securing Orica's technology and data from significant malware damage or disruption.

A key benefit of our SAP project will be enhanced security protection as some of our legacy information systems are replaced. Along with other improvements we are targeting a security maturity level (NIST 3.0).

Our cyber security program is governed by the Board Audit and Risk Committee and managed by our Chief Cyber Security Officer (CCSO). Our internal Cyber security Governance Committee is convened each quarter to review risks, events and improvement initiatives and includes senior business managers and our Vice President of Safety, Health, Environment and Security (SHES).

In conjunction with our external service providers, our Security Operations Centre (SOC) monitors our facilities, information, networks, data and other assets. Cyber security is integrated with our Major Incident Management Plan.

Cyber security is as much about people as it is about technology. We deliver a global cyber security culture and awareness program, including regular communications to our people on threats and appropriate online behaviour. This is supplemented by regular testing and drills to assess the effectiveness of our controls.

PRIORITIES AND FOCUS FOR FY20

- Extend cyber security controls and monitoring to manufacturing and production related systems.

PROTECTING CUSTOMER DATA AND PRIVACY

We are committed to protecting and securing data and personal information and comply with relevant privacy legislation. We manage privacy and data access through our Code of Business Conduct, our privacy statement, group standards and security controls.

The European Union's General Data Protection Regime (GDPR) commenced operation on 25 May 2018. We implemented a suite of internal processes to meet the requirements of the GDPR.

TAX TRANSPARENCY

TAX TRANSPARENCY REPORTING

Orica believes that enhanced tax transparency is a critical element of ethical business behaviour.

TAX POLICY – OUR APPROACH TO TAX

Orica's tax policy and approach to tax is published on our [website](#). Some important aspects of that policy are set out in this report.

As an Australian mining services company with global operations, Orica incurs a substantial amount and variety of taxes across its jurisdictions including income taxes, stamp duties, employment taxes and other taxes. Orica also collects and remits a number of taxes on trust including employment taxes and indirect taxes such as GST/VAT.

The taxes Orica pays and collects form a significant part of the economic contribution to the countries of operation.

Tax strategy and governance

Orica's tax strategy is reviewed by the Board of Directors annually. The tax strategy is aligned with the overall corporate strategy and supplements the Risk Management Policy.

The Chief Financial Officer has oversight responsibility over the tax risk management framework. Operational and governance responsibility for the execution of the Group's tax strategy rests with the Vice President Taxation, supported by a team of tax professionals. External tax expertise is used where required.

The Vice President Taxation reports on tax matters bi-annually to the Board Audit and Risk Committee.

Orica's approach to tax is applicable across the Orica Group and is reviewed and updated annually.

Compliance

Orica is committed to complying with all relevant revenue laws in a responsible manner, with all taxes properly due, accounted for and paid. A tax standard and relevant procedures are in place to ensure tax compliance obligations are managed.

Our in-house global tax team manages Orica's tax affairs is supplemented with external compliance support where required.

Structure

Orica does not support the use of artificial structures that are established just to avoid paying tax and have no commercial purpose. Orica will not enter into any tax avoidance activities.

Relationships with tax authorities

Orica aims for open, transparent and respectful relationships with the Australian Taxation Office and other tax authorities globally. Orica seeks advance rulings from taxation authorities on transactions where appropriate.

Use of tax havens

Tax havens are not used for tax planning purposes. Orica has operations in countries that are 'low tax' jurisdictions. There is genuine operational substance in these locations, or the entities are dormant.

Orica's overseas companies are subject to Australia's international tax rules (Controlled Foreign Corporation rules).

TRANSPARENCY

Orica supports the ongoing global development of improved tax transparency to increase understanding of tax systems and build public trust.

Orica has signed the Corporate Tax Transparency Code Register developed by the Board of Taxation in Australia and is committed to applying the principles and the details of the Code.

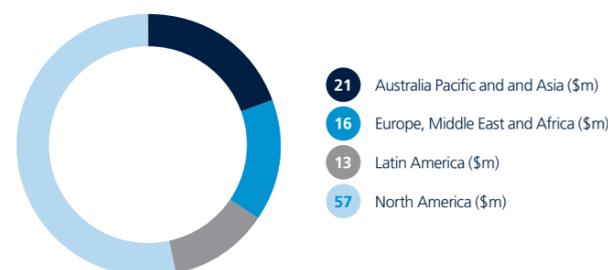
OPERATING RESPONSIBLY

TAX CONTRIBUTION SUMMARY

In the FY19 financial year, Orica paid \$107 million (FY18 \$69 million) globally in corporate income taxes and \$60 million (FY18 \$56 million) globally in payroll taxes. Orica collected and remitted \$109 million (FY18 \$124 million) globally in GST/VAT.

The charts show FY19 corporate income tax paid/(refunded) in each region (including withholding tax and trade taxes), and an analysis of total tax paid by type.

FY19 Global corporate tax and WHT on income by region (\$107m)



FY19 Global tax paid by type (\$276m)



In Australia, Orica received net corporate income tax refunds of \$10 million (FY18 \$42 million) comprising a tax refund on the resolution of a thin capitalisation dispute with the Australian Taxation Office of \$23 million and tax payments of \$13 million. Orica also paid \$19 million (FY18 \$19 million) in payroll tax and \$2 million (FY18 \$2 million) in fringe benefits tax. Orica collected and remitted \$47 million (FY18 \$43 million) in GST and \$106 million (FY18 \$105 million) in 'pay as you go' withholding taxes.



Table 3: A reconciliation of accounting profit to income tax payable

	Consolidated 2019 A\$m	Consolidated 2018 A\$m
Before individually significant items:		
Accounting profit/(loss) before tax	555.0	496.8
Prima facie income tax expense/(benefit) calculated at 30% on accounting profit	166.5	149.0
Material non-temporary differences		
variation in tax rates of foreign controlled entities	(23.4)	(16.3)
tax under provided in prior years	9.7	2.0
de-recognition of booked tax losses	-	3.5
non taxable gains on disposal of assets	-	(3.2)
other foreign deductions	-	(3.7)
non creditable withholding taxes	10.2	11.2
non allowable interest deductions	14.6	11.3
non allowable share based payments	3.7	4.4
utilisation of unbooked prior year tax losses	(10.5)	(8.0)
sundry items	6.9	7.8
Income tax expense/(benefit) before individually significant items	177.7	158.0
Individually significant items:		
Individually significant items before tax	(195.9)	(375.3)
Prima facie income tax expense/(benefit) calculated at 30% on individually significant items	(58.8)	(112.6)
Material non-temporary differences		
variation in tax rates of foreign controlled entities	0.3	2.1
non taxable gain on formation China joint venture	(10.6)	-
impairment of Minova business	-	60.6
write down of US deferred tax assets	-	47.9
Income tax expense/(benefit) on individually significant items	(69.1)	(2.0)
Income tax expense/(benefit)	108.6	156.0
Material temporary differences		
deferred tax	(0.5)	(6.3)
write down of US deferred tax assets	-	(47.9)
Tax payments more/(less) than tax charges	22.5	(18.6)
Tax refunds on matters in dispute with tax authorities	(23.1)	(13.9)
Income tax paid per the statement of cash flows	107.5	69.3

Effective tax rate for Australian and global operations

	Notes	Consolidated 2019	Consolidated 2018
Before individually significant items:			
Australia	1	36.9%	39.9%
Global operations (including Australia)		32.0%	31.8%

1. The tax rate is the percentage of income tax expense to accounting profit/loss before tax (before individually material items) adjusted to exclude exempt dividend income.

OPERATING RESPONSIBLY

INTERNATIONAL RELATED PARTY DEALINGS

Orica prices its international related party dealings to reflect the substance in its operations in accordance with the 'arm's length principle' as defined in the Organisation for Economic Co-operation and Development (OECD) guidelines and in accordance with the laws in both Australia and the countries in which it operates.

Orica has transfer pricing procedures which govern the pricing of all international related party dealings. These procedures require all international related party dealings to be priced in accordance with the arm's length standard. Orica maintains contemporaneous records to support the pricing of its international related party dealings and benchmarks and documents the outcome of its material dealings on an annual basis.

The material international related party dealings impacting Orica's Australian taxable income may be summarised as follows:

- the purchase of raw materials and finished products from related parties in Singapore, Indonesia and China. The products purchased are ammonia, caustic soda, gas, bulk explosives and initiating systems;
- the sale of raw materials and finished products to related parties in Peru, Singapore, Russia, Panama and New Zealand. The products sold include bulk explosives, packaged explosives, and initiating systems;

- the provision and receipt of services from entities resident in Singapore, Chile, the United Kingdom, Germany, the United States, Canada and South Africa. The nature of the services include general management, information technology, sales and marketing and logistics;
- the use of intellectual property held by a related party in Singapore. The nature of the intellectual property includes technical knowhow related to the manufacture of Orica's products and the Orica name and trademarks; and
- the provision of contract research and development activities for a related party in Singapore.

Orica has a treasury function based in Melbourne which provides loans and accepts deposits from in excess of 80 group companies (resident in more than 40 countries) at market interest rates. The material transactions are with related parties in Germany, Indonesia, Russia, Singapore, the United Kingdom and Mexico. It also has a subsidiary in Singapore which acts as the Group's captive insurer.

Table 4: Australian tax return data

	Notes	2018 A\$m	2017 A\$m
Total income	1	2,534	1,999
Taxable income	2	61	108
@ Tax Rate	3	30%	30%
Tax liability		18	32
Offset reductions	4	(18)	(26)
Tax payable		-	6

- Total Australian income (includes sales, dividends, interest income, etc.) before all expenses (for example, interest, employee costs, depreciation, etc.).
- Taxable income after allowing for all deductible expenses and tax exempt income.
- Australian Statutory tax rate.
- Offset reductions of \$18 million (FY17 \$26 million) relating to franking credits, foreign income tax and research and development.

MINIMISING OUR ENVIRONMENTAL FOOTPRINT

FY19 HIGHLIGHTS

 **3.3% reduction in GHG emissions intensity on FY18 levels, achieving FY19 target**

 **6% reduction in total Scope 1 and 2 GHG emissions, compared to FY18**

 **Nitrous oxide emissions reduced 10%, compared to FY18**

 **Adopted TCFD to progressively guide climate-related disclosures from FY20**

 **59% waste diversion from landfill**



PROGRESS IN FY19

Environmental compliance

We aim to comply with relevant environmental legislation, licences and environmental consents across our global operations. In FY19, there were no significant (severity 3 or greater) environmental incidents.

In 2016, an environmental incident occurred in Gladstone, Queensland at Orica Australia Pty Ltd (OAPL) Fisherman's Landing Ammonia Terminal involving the release of approximately 330kg of ammonia. No material or serious environmental harm or injury to persons arose from the incident. However, in FY19, OAPL was prosecuted for the 2016 event by the Queensland Department of Environment and Science (DES). Orica pleaded guilty to one charge under section 430(3) of the *Environmental Protection Act 1994* (Qld) of contravening a condition of our Environmental Authority and was fined \$50,000 for the offence and ordered to pay the DES' legal and investigation costs of \$4,000. No conviction was recorded against OAPL.

Since 2016, our activities at Fisherman's Landing have undergone an extensive risk review. We completed works to our flaring system which controls how vapour release is managed from the ammonia tank. Additional controls and temperature monitoring were installed to provide early warning of any potential release. Equipment and controls to manage ammonia were also upgraded to further strengthen their integrity.

Contamination management

We implement a risk-based approach to assess, understand and verify potential health and environment risks at several of our sites affected by past operating practices.

Our Material Environmental Risk Review program evaluates site environmental risks and verifies management controls, including for contamination. The program complements our existing SHES assurance framework which assesses compliance against our environment performance requirements.

Environmental remediation

We manage environmental issues associated with our current and historical activities.

Our program for the safe destruction of the hexachlorobenzene (HCB) stockpile in New South Wales, Australia has progressed with the destruction of the second shipment of 1,500 tonnes completed in Finland during the year. A third shipment of 2,100 tonnes was exported to Finland and Sweden in February 2019 and destruction is proceeding to plan. Application for a further 2,600 tonnes in 2020 to Finland and Sweden has been submitted.

During FY19, remediation activities associated with past operations were focused at sites in Australia. Soil remediation works were completed at Deer Park and Yarraville, Victoria, with subsequent groundwater clean-up to commence in FY20.

Further information on our remediation progress can be found on our [website](#).

SAFEGUARDING THE ENVIRONMENT AND USING RESOURCES EFFICIENTLY

OUR APPROACH

The nature, scale and geographical spread of our activities bring inherent environmental challenges. We have an integrated Safety, Health, Environment and Security (SHES) Management System that comprises systems, processes, and procedures which define environmental protection and monitoring measures.

The system includes our Group Environment Standard which defines the performance requirements for environmental practices across our global sites and activities. This requires our people to understand key environment risks and information pertaining to environmental controls which are aimed at minimising our impacts on the environment. The management of energy, water and waste is also governed by the Group Environment Standard.

Our people are required to complete mandatory induction training which includes environmental management. Relevant operational personnel also undertake environmental awareness and SHES Management training as a part of their mandatory training.

During the year, our teams performed a range of assurance activities including site self-assessments, regional assessments and corporate audits. Corrective actions identified during these audits are monitored for implementation to prevent reoccurrence.

MINIMISING OUR ENVIRONMENTAL FOOTPRINT

Energy

Manufacturing our products, particularly ammonia, is an energy intensive process using electricity and other fuels including natural gas and petroleum-based products as feedstock and raw materials. Energy is also consumed in our offices, vehicles and general plant operations.

Natural gas prices in Australia have increased sharply in recent years and we continue to advocate that gas exports do not come at the expense of an adequate local supply. In FY19 we completed gas supply negotiations for Kooragang Island and Yarwun to the end of 2021 with contracts for gas supply beyond 2021 now under consideration.

In FY19, a net total of 22 million gigajoules (GJ) of energy was used, of which 12.4 million GJ (56 per cent) was used as feedstock. This 5.9 per cent increase in total energy use over FY18 was due to increased production.

Energy consumption



Our ancillary energy consumption of 9.8 million GJ was largely from natural gas (74 per cent), electricity (13 per cent) and steam (7 per cent). Other minor fuel sources included diesel and wood.

Net energy intensity increased marginally (3.2 per cent) from last year to 5.7 GJ/tonne. While this increase was not due to a specific product or site, in FY20 we will work with our material energy consumption sites to identify opportunities to gain efficiencies where plausible.

A key challenge in adopting onsite renewable energy is the lack of suitable built infrastructure and available space at our major manufacturing sites. In FY19 we maintained grid-connected solar capacity in our Indian operations, producing 511MWh of solar energy, helping avoid 498 tCO₂e. We are presently investigating opportunities to utilise renewable energy at other sites around the world.

Water management

Water is an important resource for our products, operations and the health and viability of the ecosystems and communities where we operate. It is used as a raw material in products, within manufacturing and safety processes, and for site amenities.

We monitor and manage the consumption of potable, surface, recycled and groundwater across our global operations. The various water sources that contribute to each site's water use are analysed to identify opportunities for reduced consumption and improved efficiency.

During FY19, we continued to investigate feasible opportunities to:

- improve operational efficiency to reduce water consumption;
- source water more sustainably wherever practicable; and
- be less reliant on potable water for operational tasks.

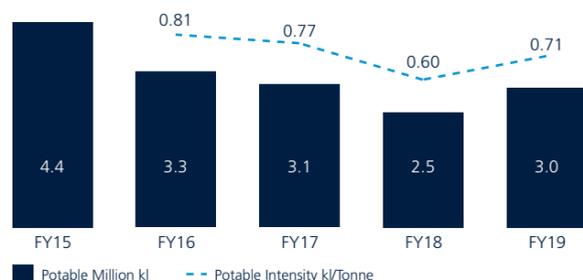
With increased production in FY19, we consumed 8.7 million kilolitres (kl) of gross water, up 0.8 per cent from FY18. Intensity of total gross water usage remained unchanged from FY18 at 2.2 kl/tonne.

During the year, we experienced issues with accessing externally sourced recycled water at our Kooragang Island site. With supply of recycled water disrupted for approximately three months and production increases at other major manufacturing sites, our freshwater consumption increased 10 per cent on FY18 levels to 6.3 million kl. Freshwater intensity increased 9.8 per cent from FY18 levels to 1.57 kl/tonne. In the absence of the Kooragang Island recycled water access issues, freshwater intensity would have remained stable at FY18 levels. Access to our recycled water source was restored in late FY19.

Approximately 95 per cent of the freshwater used was consumed by six of our major manufacturing plants in Canada, Brazil, Australia and India, and the Botany site (groundwater extraction) in New South Wales, Australia. None of these plants are in 2019 water-stressed catchments, as defined by the World Resources Institute.

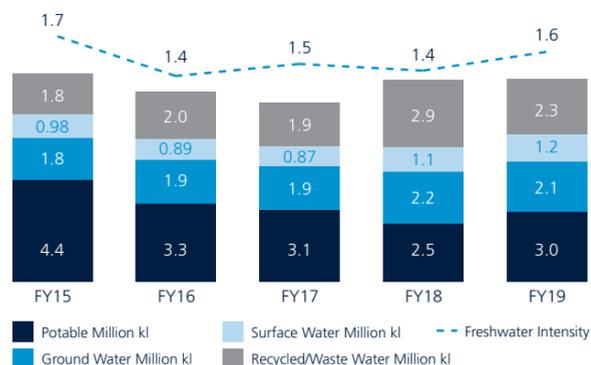
We aim to reduce our reliance on freshwater withdrawal (groundwater, surface and potable sources) and consumption of potable water for manufacturing purposes. Our potable water consumption had reduced 31 per cent since FY15, however, consumption increased in FY19 due to the disruption of the Kooragang Island recycled water source. In FY20, we will increase our focus on reducing potable water consumption. We established a new metric and target for potable water in our FY20 sustainability scorecard and will pursue additional reduction opportunities at our major manufacturing sites.

Potable water consumption



Note: Potable water intensity data only available from FY16.

Freshwater consumption by source



CASE STUDY

A SPOTLIGHT ON WATER

Our efforts to reduce water use at our global manufacturing sites centres on reusing process water and increasing access to recycled water sources.

In Australia, our Kooragang Island plant has gone from one of the largest consumers of potable water to one of Orica's biggest users of recycled water. At our Gomia manufacturing site in India, our ammonium nitrate plants are zero effluent, meaning all process waters are reused in the manufacturing plant.

Initiatives to reuse water or capture rainwater are in place across many of our mining operations. The Kurri Kurri and Liddell plants in New South Wales, Australia capture rainwater onsite for use in manufacturing ammonium nitrate emulsion. Recycling boiler blowdown, hot water generator and washdown water is practiced at sites in Europe and Latin America. Following filtration, these water sources are readily returned to our operating processes. This approach has been implemented at our mining services sites in Huachipa and Congata, Peru and our Xanthates site in Polkowice, Poland.



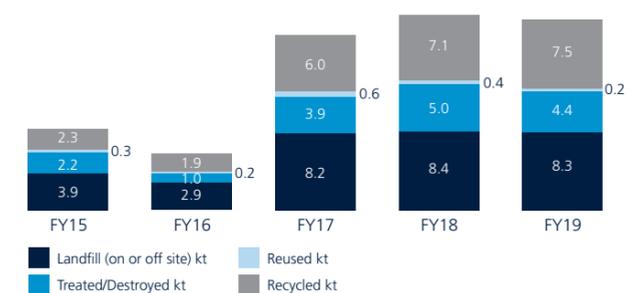
Waste management

We aim to avoid or minimise waste generation in the manufacture, packaging, supply and distribution of our products.

In FY19, while we reduced waste generation by 2.3 per cent from FY18, we fell short of our five per cent reduction target. The proportion of waste sent to landfill reduced by one per cent and waste recycled increased by 6.1 per cent from FY18. We identified new opportunities at our manufacturing sites to reduce waste volumes and increase reuse and recycling this year. The feasibility and business cases for implementing these opportunities is presently being assessed.

Nearly 60 per cent of total waste generated continues to be diverted from landfill by being treated, destroyed, incinerated, re-used or recycled.

Waste generation by destination



Waste diverted from landfill



PRIORITIES AND FOCUS FOR FY20

- Confirm the feasibility and business case for identified waste reduction and recycling opportunities for implementation.
- Commence groundwater remediation at Deer Park and Yarraville, Victoria, Australia.
- Review and update our SHES procedures that support meeting our SHES standard requirements for energy, water and waste.

MINIMISING OUR ENVIRONMENTAL FOOTPRINT

CLIMATE CHANGE

OUR APPROACH

We are taking a phased approach to understanding and managing climate-related risks and opportunities.

Our manufacturing and business activities generate greenhouse gas (GHG) emissions. As the global economy decarbonises and adopts new technologies and sources of energy, we are exposed to long-term physical and transitional risks including shifts in commodity demand and customer mix.

Our response to climate change is focused on:

- establishing governance structures and the right policy settings to manage climate-related risks and opportunities;
- integrating the management of physical and transitional climate risks into company-wide risk management processes. We govern climate change as a material business risk which includes adapting to a changing climate and using future commodity market insights and our assessment of policy and regulatory risks to inform our strategic business planning;
- identifying and implementing feasible technology solutions to reduce our GHG emissions; and
- improving our disclosure of climate-related information.

Increasing transparency on climate change is important for our stakeholders. This year we reviewed market and regulatory expectations for climate-related disclosure and from FY20, our assessment and disclosure of climate risks and opportunities will be with reference to the recommendations of the Financial Standards Board Task Force on Climate-related Financial Disclosures (TCFD).

We maintained transparency of our report to the 2019 CDP (formerly the Carbon Disclosure Project) this year which can be found on CDP's [website](#).

PROGRESS IN FY19

Climate change governance

We have assessed and manage climate change as a material business risk.

Our Board, through the Safety, Health, Environment, Community and Security (SHECS) Committee, oversees the implementation of our Climate Change Policy. Advice to the Committee is considered and endorsed by our CEO and Executive Committee. Accountability for our climate change response rests with the Group Executive, Corporate Services and Company Secretary.

During FY19, our SHECS Committee:

- monitored progress against our Climate Change Policy commitments;
- monitored performance against our GHG emissions intensity target; and
- reviewed and approved our climate-related disclosures contained in our FY19 Reporting Suite.

In FY19, our Board considered a detailed internal assessment of climate risk. This included an evaluation of climate-related risks and opportunities, signposts for ongoing risk monitoring, market expectations for climate disclosure and the adequacy of our long-term strategic response.

Following that assessment, our Climate Change Policy was updated and is now available on our [website](#). New enhancements include an acknowledgement that climate change as a material business risk, a commitment to reducing our operational emissions and adoption of the TCFD recommendations to progressively guide our future climate-related disclosures.

Additional information on our approach to corporate governance is detailed in our FY19 Annual Report and FY19 Corporate Governance Statement available on our [website](#).

Physical and transition risks

Climate-related risks are considered in two broad categories: risks of material physical impact (physical risks) and risks associated with the transition to a lower carbon economy (transition risks). In FY19, we continued to build on an assessment of our physical risks undertaken in FY18 and increased our understanding of the transition risks associated with our business activities. In FY20, our approach and work program to understand climate risk will be with reference to the TCFD Recommendations.

There is significant variance in analyst opinion on the pace and scope of transition towards a net-zero emissions economy and the role of fossil fuels. Our strategic planning processes consider a range of scenarios associated with changing commodity demand and the emergence of carbon markets.

Our assessment in FY19 considered three published scenarios representing the outcomes of a range of possible future pathways.

Scenario 1 – Base case – IEA New Policies Scenario	Scenario 2 – Bloomberg New Energy Finance	Scenario 3 – IEA Sustainable Development Scenario (2°C)
<p>Base Case combines the modelling of Wood Mackenzie and the International Energy Agency (IEA) 'New Policies Scenario' which:</p> <ul style="list-style-type: none"> • considers the broad policy commitments and plans governments have made to tackle climate change; and • assumes thermal coal will gradually lose market share to gas and renewables as a source for power generation in developed economies. <p>Our base case for forecasting, using a range of external sources, indicates that these competing forces deliver relatively flat, seaborne, thermal coal demand for the coming decade, as the decline in its share of the energy mix is offset by increasing overall energy demand in developing Asia. The demand for higher quality, Australian-sourced coal will continue to remain strong with the shift to ultra, super-critical, coal fired power generation. At some point this balance will tip, and absolute thermal coal demand will decline at a rate that is dependent on the costs and integration of variable renewable energy power systems and energy storage.</p>	<p>Scenario 2 is based on Bloomberg New Energy Finance data sets.</p> <p>Key assumptions:</p> <ul style="list-style-type: none"> • almost 50 per cent of global electricity from renewables by 2050, primarily solar PV and wind supported by batteries and other storage technologies; • coal remains a dominant fuel through to 2030, but coal plant retirements will outpace coal additions. Coal increasingly replaced by renewables and, in the case of the US, gas, and higher capacity factors and utilisation rates for renewables compared to the base case scenario; • gas consumption for power generation remaining flat, despite growing capacity; and • growth in electric vehicles adding to electricity demand. 	<p>Scenario 3 is based on the IEA's Sustainable Development Scenario (SDS) with the emissions trajectory fully in line with achieving the long-term objectives of the Paris Agreement.</p> <p>Key assumptions:</p> <ul style="list-style-type: none"> • integrated approach to achieving globally agreed objectives on climate change, air quality and access to energy; • global energy demand is relatively flat until 2040 as energy consumption patterns change. Driven by energy efficiency and increased direct use of renewable energy; and • replacement of fossil fuels by renewable energy sources to meet global emission reduction targets, with scalable carbon capture and storage and significant cost reductions in renewables and energy storage.

As a subset of our climate-related scenario planning, we undertake modelling of our potential direct exposure to the costs of carbon emissions. Assumptions in FY19 included carbon pricing ranging between A\$30 and A\$65 per tCO₂e over the decade beginning 2020. The outcomes of this analysis informs business planning and emissions reduction investment cases.

We continue to confront medium-term climate policy uncertainty in our two key jurisdictions of Australia and Canada. Our current exposure to carbon costs is modest and we largely offset financial impacts through the generation of carbon credits and participation in relevant global carbon markets.

Our scenario analysis continues to indicate a manageable transition over the coming decade, given forecast commodity and energy demand, immaterial direct carbon costs and opportunities to capitalise on climate-related opportunities.

Over the longer term, the current pace of transition towards a net-zero emissions economy, growth of our digital products and increasing demand outside of thermal coal markets is projected to enable us to maintain a profitable balance in our customer and portfolio mix. With our adoption of the TCFD framework from FY20, we will update our transition climate risk and opportunity assessment and define several scenarios which will form the basis of future climate risk analysis.

We are focused on capturing growth and diversification opportunities to maintain the resilience of our business by:

- continuing to invest in new mine blasting technology and building a portfolio of digital products servicing the broader mining value chain;
- commercialising service-based technologies and digital products for our customers; and
- growing our market share in the civil infrastructure and tunnelling sector.

Greenhouse gas emissions performance

Our GHG emissions intensity target in FY19 was 1.95 tCO₂e per tonne AN sold. We achieved our target with a reduction of 3.3 per cent (from FY18) to 1.75 tCO₂e per tonne AN sold.

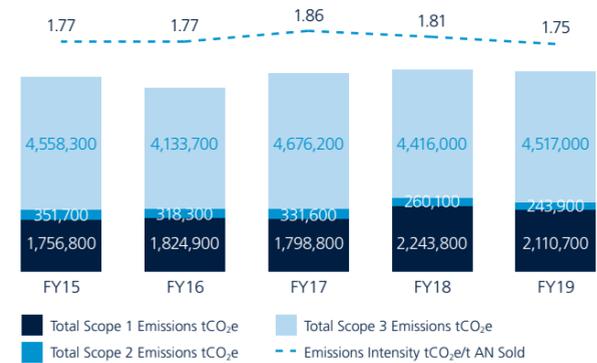
Our improved emissions intensity was primarily due to the replacement of ageing abatement catalyst and ongoing abatement trials at our nitric acid facilities. While our Kooragang Island abatement trials continue, initial results have confirmed several operational and supply risks that must be overcome before a longer-term abatement pathway can be confidently pursued (refer Emissions Abatement Strategy section).

In FY20, we have committed to a GHG emissions intensity target of 1.80 tCO₂e per tonne AN sold. This is slightly above our FY19 performance due to forecast production variations across our manufacturing plants and continued uncertainty with maintaining consistent abatement performance in our trial plants.



MINIMISING OUR ENVIRONMENTAL FOOTPRINT

Net greenhouse gas emissions



Meeting customer product demand is achieved each year through a combination of our manufacturing capability and third-party supply. We continue to incorporate supplier Scope 3 emission sources in our GHG emissions inventory which increased 2.3 per cent in FY19 from FY18 levels. This approach enables a more accurate reflection of our total GHG emissions footprint, regardless of whether we make or purchase from third-party suppliers.

Our total (Scope 1, 2 and 3) GHG emissions decreased by 0.7 per cent from last year despite customer demand for our products and associated production continuing to increase. Operational (Scope 1 and Scope 2) GHG emissions reduced 6.0 per cent from FY18.

Emissions abatement strategy

In FY19, we further progressed work to identify a longer-term emissions abatement and investment pathway to meet our commitment to reduce GHG emissions. Our priority is to abate nitrous oxide GHG emissions from the manufacture of nitric acid. These comprise 59 per cent of Orca's total emissions and have a global warming potential 298 times that of carbon dioxide.

Scope 1 and Scope 2 emissions by greenhouse gas



ABATEMENT OF NITROUS OXIDE EMISSIONS FROM NITRIC ACID PRODUCTION

Nitrous oxide is a by-product of nitric acid production formed during the oxidation of ammonia. There are two main abatement techniques: secondary abatement reduces nitrous oxide emissions directly after they are formed in an oxidation reactor; while tertiary abatement reduces nitrous oxide by removing emissions from the tail gas at the end of the process. Both techniques utilise an abatement catalyst which requires periodic replacement as performance declines over time. Emissions reduction potential is therefore at a peak with newly installed catalyst in place, but overall performance is dependent on the catalyst life and frequency of replacement.

Secondary abatement technology is employed at many of our global sites and we are currently designing a tertiary abatement system for installation in one of our nitric acid plants in 2021.

We face unique operational challenges associated with implementing secondary abatement catalyst in our high-pressure nitric acid plants. Our current abatement catalyst trials seek to further understand and potentially overcome these barriers. While the trials are demonstrating some level of improved emissions reduction performance, the long-term viability of maintaining this technology remains uncertain.

In FY19, our total nitrous oxide GHG emissions reduced 10 per cent (equivalent of 167,000 tCO₂e), from FY18 levels. Key contributors included Kooragang Island, Australia (21 per cent reduction), Bontang, Indonesia (12 per cent reduction) and Carseland, Canada (5 per cent reduction). These emissions reductions were primarily due to continuing work at Kooragang Island to trial more effective abatement catalyst, as well as the replacement of aged abatement catalyst in Bontang during FY19.

Further evaluation of longer-term tertiary abatement and other emissions reduction technologies will continue in FY20 to enable us to better understand its viability and provide necessary data to inform future investment decisions.

Industry associations

Over the last year there has been increasing stakeholder interest in the role of industry associations, particularly their policy advocacy on climate change.

We maintain memberships with several global industry and broader business associations that provide value to our business, industry and the wider economy. We are an active participant in the development of climate change policy whether through direct engagement or through our industry associations. We advocate for climate change policies based on the following principles:

- open and transparent international carbon markets;
- managed transition for the energy sector towards low emissions generation, while balancing the needs of energy security, affordability and emissions reduction; and
- consideration of emissions-intensive, trade exposed businesses and the priority of maintaining relative competitiveness between trading nations.

MINIMISING OUR ENVIRONMENTAL FOOTPRINT

Climate-related opportunities

Our response to climate change also creates financial, market, product and renewable energy opportunities.

We participate in relevant compliance and voluntary carbon markets and since 2013 have invested in Mineral Carbonation International, an Australian start-up focused on developing technologies to safely capture carbon dioxide emissions for potential use in construction materials such as cements and plasterboard.

In FY19, we engaged with the Nitric Acid Climate Auctions Group (NACAG) on opportunities to generate carbon credits from nitrous oxide emissions reduction activity. The NACAG is an initiative of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety.

Our engagement with the Carbon Markets Institute this year has strengthened our understanding of domestic and international carbon markets. As we look to FY20 and beyond, we are better placed to participate in relevant markets to capitalise on financial and reputational benefits.

PRIORITIES AND FOCUS FOR FY20

- Implementation of the TCFD framework focusing on:
 - updating our transition climate risk and opportunity assessment, and defining several scenarios on which to base our future climate risk analysis;
 - establishing an internal working group to monitor progress and advise key decision makers, including executives and teams managing climate change risks, opportunities and disclosures;
 - developing appropriate metrics and targets to assess climate-related risks and opportunities and ongoing performance.
- Progress operational emissions abatement trials and technology reviews to identify a sustainable long-term emissions abatement pathway.
- Finalise design and approvals for future installation of tertiary abatement.



SUPPORTING LOCAL COMMUNITIES

FY19 HIGHLIGHTS



\$1.9 million contributed in our communities through global, regional and local partnerships and initiatives (or 0.2 per cent of earnings¹)



Over 750 schools with students and families engaged in STEM through hands-on learning



10 years partnership with STELR Project supporting children in STEM



Our OCPP has successfully delivered some great community outcomes. We look forward to continuing our support by evolving the program in FY20 to better align with our changing business priorities. These include:

- a focus to deliver greater efficiencies, systems and processes, and improve our core operational and financial disciplines;
- reorienting our community investments to reflect our regional operating model; and
- ensuring the types of community initiatives we support on-ground meet local social needs and rising community expectations for protecting public health and the environment.

In FY20 we will commence a comprehensive review of our community investment program to ensure we are realising maximum value from our work in this area. Our aim is to strengthen the program by inspiring and involving our employees and better collaborating with our customers to deliver the best possible outcomes for our communities.

CASE STUDY

AN IMPORTANT MILESTONE; STELR

During FY19, we were recognised for 10 years of partnership with the Australian Academy of Technological Sciences and Engineering's STELR (Science and Technology Education Leveraging Relevance) Project.

STELR is an innovative program aiming to engage students in science, technology, engineering and mathematics (STEM) through hands-on, inquiry-based learning opportunities focused on real-world challenges such as renewable energy, water and sustainable housing.

As the founding partner and major sponsor since 2009, we have helped STELR develop new curriculum materials, provide professional learning sessions for teachers, and purchase STELR equipment. With our support, the program has grown and been introduced to Indonesia, India, Canada and the Philippines.



COMMUNITY INVESTMENT

OUR APPROACH

Building mutual trust between local communities and our operations remains our priority. We do this by engaging our local stakeholders and forging relationships based on mutual respect. Our community investments are also focused on meeting the social needs of communities located close to our operations.

Expectations and requirements on how we engage our stakeholders are outlined in a Group Standard along with processes for handling community complaints and issues, and our approach to making community investments.

Our approach comprises:

- developing global consistency in our systems and processes;
- building internal capability around community engagement and community investment practices; and
- ensuring community investment funds are effectively channelled and leveraged in all operating regions.

In FY15, we implemented the Orica Community Partnerships Program (OCP). Over five annual funding rounds, we funded 73 community initiatives in over 15 countries. Funds committed to initiatives across all our global operating regions totalled \$5.7 million.

1. Earnings represents EBITDA (EBIT before individually significant items plus depreciation and amortisation expense).

SUPPORTING LOCAL COMMUNITIES

PROGRESS IN FY19

Measuring community sentiment

To build stakeholder trust in our business we need to understand stakeholder expectations and their level of acceptance of our activities in their communities.

In FY19 we implemented a process for measuring community sentiment at seven of our major global manufacturing sites. Our analysis considered several factors that collectively shape reputation and community opinion of Orica including environment and safety performance, outstanding regulatory issues, proximity to local communities and existing stakeholder relationships.

Overall, our findings from this analysis show that our business activities are acknowledged as being central to local regional economies and employment opportunities, and often contribute substantially to social infrastructure.

These insights will help shape our stakeholder engagement and community investment priorities in FY20 and beyond.

Community investment

In FY19, the total value of our social and community investment program, including contributions from our Company and our people totalled \$1.9 million, or 0.2 per cent of earnings².

Through established corporate, regional and local partnerships and community investments, we continued to prioritise stakeholder engagement, young people's education, community health, and disaster and emergency relief initiatives.

Highlights in FY19 included:

- celebrating the 10th anniversary of our founding partnership of the STELR Project. The hands-on learning program now extends to over 750 schools worldwide including near our operations in Australia, India, Canada, Indonesia, Philippines and New Zealand and reaching around one million students and families;
- working with our partner The Smith Family to achieve their goal of helping 300 local disadvantaged students through their Learning for Life program in Gladstone, Queensland near our Yarwun manufacturing site. A further 300 students will be offered placements by the end of 2020;
- co-designing a local school competition (PERUMIN 2019) with our Arequipa community in Peru. Winning teams developed new grey water reuse and waste segregation/recycling initiatives for their schools;
- volunteers at our Brownsburg site, Quebec, Canada providing support for a range of local community initiatives including an outdoor play area for special needs students of Saint-Julien school in Lachute; and
- continuing to support our communities near Congata, Peru by funding five scholarships that will assist low income students at surrounding schools pursue technical careers and support their families.

CASE STUDY

HELPING LOCAL CHILDREN AND THEIR FAMILIES IN GLADSTONE, AUSTRALIA

The Smith Family is the largest children's education charity helping young Australians in need to succeed at school. After helping them to establish their presence in Gladstone – the first new community for The Smith Family in 10 years, we celebrated our one-year anniversary of providing their *Learning for Life* education support program to local children and their families in Gladstone, Queensland.

The *Learning for Life* program offers critical support for students from disadvantaged backgrounds that is proven to improve their educational outcomes. This is helping students transition from high school into further studies, training or employment.

Orica is proud to have supported 300 *Learning for Life* sponsorships awarded to disadvantaged children and young people in the area in the first year.

Following the initial success of the program, The Smith Family has announced an additional 300 Gladstone students will be invited join the program by 2020.

Josh, a former *Learning for Life* recipient who is now a Youth Worker at a Smith Family partner school in Gladstone said:

"I think the sponsorship changed my life, because it gave me opportunities that I might not have had. Now I'm a youth worker, part of my job is that I get to do all the referrals for The Smith Family in Gladstone. That's something I'm extremely proud about; that I now get to give back in that way."



CASE STUDY

MUSEUM EXPRESS

Over the last four and a half years we invested nearly \$250,000 towards Museum Express, a local science program in the Hunter and Central Coast regions of New South Wales, Australia.

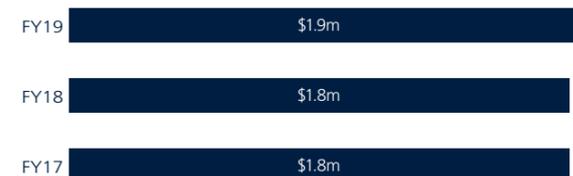
Museum Express has delivered over 300 inspiring science shows to thousands of students at more than 50 primary schools. The program presents science in a fun and accessible way, with the aim of sparking curiosity in the next generation.

Science, technology and engineering education is an area of special interest for Orica. As well as supporting Museum Express, our Kooragang Island site runs a unique chemistry program for senior high school students.

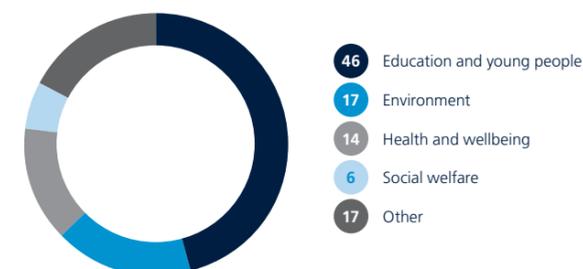
Since 2013, more than 1,000 local students have visited the Kooragang Island site to learn about our operations and apply their classroom studies to the real world. The program includes a guided tour of the plant, a presentation by a chemical engineer and the opportunity for students to talk with recent university graduates working at the site.



Community investment A\$m



Community investment by theme %



Note: Other includes disaster and emergency relief, arts and culture, economic development.

More information on our community partnerships is available on our [website](#).

PRIORITIES AND FOCUS FOR FY20

- Conduct a comprehensive review of our existing OCPP program.
- Launch our refreshed global community engagement and investment strategy.

2. Earnings represents EBITDA (EBIT before individually significant items plus depreciation and amortisation expense).

ABOUT THIS REPORT

Our FY19 reporting suite includes this Sustainability Report, our Annual Report, and our Corporate Governance Statement. These documents are available to download via our [website](#).

REPORTING APPROACH AND SCOPE

This Sustainability Reporting covers the financial year 1 October 2018 to 30 September 2019 (FY19) for Orica Limited, unless otherwise stated.

We report on our sites and activities we wholly own and operate, and those we operate in a 50 per cent or more joint venture during the year. Information regarding the controlled entities in the Orica Group can be found in our [FY19 Annual Report](#).

The structure of our report is aligned to material sustainability topics identified through our materiality review. For each topic we have provided an overview of our approach and performance over the reporting period, with the aim of providing readers with a clear view of how we are addressing our most material impacts.

Data for energy, greenhouse gas emissions, water and waste is only reported for the operations we wholly own and operate, with the exception of the Bontang Indonesia joint venture, which is included as we maintain management control of the operation and its material greenhouse gas emissions profile.

Numbers in this document are subject to rounding and presented in Australian dollars unless otherwise stated.

Additional sustainability metrics and data is provided in our Sustainability Data Centre available on our [website](#).

REPORTING STANDARDS

The report contains standard disclosures guided by the Core Global Reporting Initiative (GRI) Reporting Standards (GRI Standards).

A GRI Content Index is available on our [website](#).

We report greenhouse gas emissions, energy consumption and energy production from our Australian facilities under the Australian Government's *National Greenhouse and Energy Reporting Act 2007*, supporting regulations and relevant guidelines. Greenhouse gas emissions from our non-Australian sites are reported using the same general framework, with the application of local regulations, energy and emission factors. The reporting of non-Australian data is based on materiality thresholds.

VERIFICATION PROCESSES

We employ internal and external verification processes to assure the completeness and accuracy of information.

Our internal processes cover data review, verification and validation to accept, reject or qualify data in an objective and consistent manner. Our processes are governed by our integrated management system incorporating Group Standards covering Safety, Health, Environment, Security (SHES) Management and Environment.

Requirements for monitoring equipment calibration, data collection, recording, reporting, verification and validation are documented and implemented.

We perform independent reasonable assurance over a selection of performance disclosures in our FY19 Sustainability Report. More specifically:

- Australian energy and greenhouse gas data for the period 1 October 2018 – 30 June 2019; and
- Canadian energy and greenhouse gas data for the period 1 October 2018 – 31 December 2018.

There is some misalignment in our sustainability reporting (1 October 2018 – 30 September 2019) and external assurance periods due to our participation in different greenhouse gas compliance programs in Australia and Canada. Unassured data in the reporting period is audited in the subsequent year and any material differences are restated.

For an overview of the metrics that underwent assurance this year, please see our external Assurance Statements, available via our reporting [website](#).

Previous sustainability and annual reports can also be downloaded via the [website](#).

Enquiries can be directed to companyinfo@orica.com

