

# SUSTAINABLE DEVELOPMENT REPORT



Woodside

# 2018



## On the cover

The cover features an aerial view of the remarkable sandbanks off the coast from the Searipple Lookout in Karratha, near Woodside's operations and development activities on the Burrup Peninsula.

## About this report

This report provides an overview of Woodside's sustainability approach and performance as at 31 December 2018. Additional information, including data tables, is available on our website ([woodside.com.au](http://woodside.com.au)). The report was approved by Woodside's Board of Directors.

## Scope

Woodside Petroleum Ltd (ABN 55 004 898 962) is the ultimate holding company of the Woodside Group of Companies. In this report, unless otherwise stated, references to 'Woodside' and 'the company' refer to Woodside Petroleum Ltd and its controlled entities. The information in this report covers sites and production facilities wholly owned by Woodside, and/or operated by Woodside in a joint venture.

Health, safety, environment and people performance data is reported on a total basis, although environmental performance data also includes a Woodside equity share reporting basis. Health and safety data includes international exploration activity.

## Reporting frameworks

This report has been prepared in accordance with the Global Reporting Initiative (GRI) Standards core-level reporting and the International Petroleum Industry Environmental Conservation Association (IPIECA) Oil and Gas Industry Guidance on Voluntary Industry Reporting (2015). IPIECA is the global oil and gas industry association for environmental and social issues. Refer to our website for our GRI and IPIECA content indices.

## External assurance

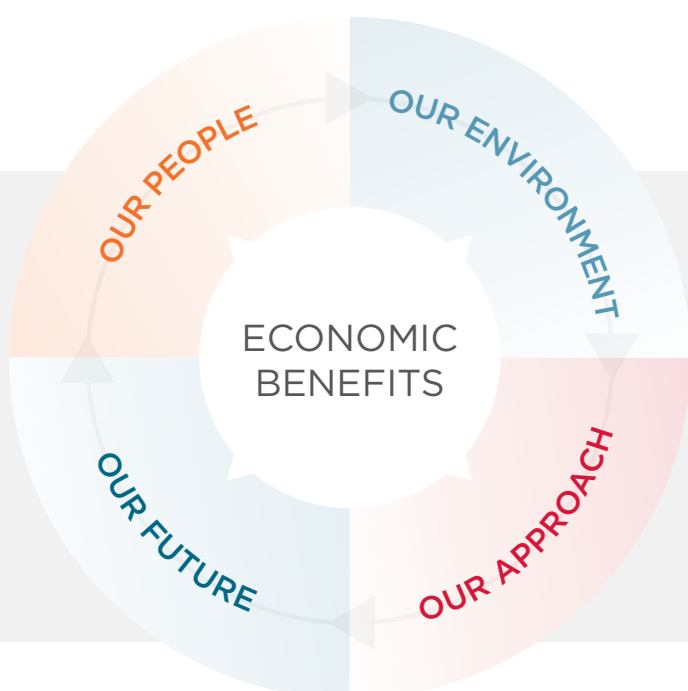
EY has conducted limited assurance over selected information in this report and the associated data tables. A copy of EY's assurance statement is available on our website. Our Scope 1 and 2 greenhouse gas emissions data is assured by GHD and our social investment contributions are assured by London Benchmarking Group.

## Sustainability performance

To evaluate our progress in a more objective way, we respond to a number of recognised environment, social, and governance indices. Details of our performance is located on our website.



We are working with Green Reports™ on an initiative ensuring that communications minimise environmental impact and create a more sustainable future for the community.



This report is structured into four key sections detailing our people, environment, approach and future. These aspects underpin the economic benefits generated by our activities for our shareholders, partners, governments and the communities where we are active.

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### Our Annual Report 2018

Our Annual Report 2018 is a summary of Woodside's operations, activities and financial position as at 31 December 2018. Copies of the Annual Report 2018 are available on request or from our website.

### Report feedback

We welcome your feedback on our report.

[Email: communities@woodside.com.au](mailto:communities@woodside.com.au)

# ABOUT WOODSIDE

Woodside is the pioneer of the LNG industry in Australia and the largest Australian natural gas producer. We have a global portfolio and are recognised for our world-class capabilities as an integrated upstream supplier of energy.

We deliver energy solutions that provide sustainable value for our shareholders, partners and the communities where we are active. Our operated assets are renowned for their safety, reliability and efficiency and we have a strong track record in project development. As Australia's premier liquefied natural gas (LNG) operator, we produced 6% of global LNG supply in 2018 and operate two floating production storage and offloading facilities.

We are delivering on our growth strategy, creating an integrated LNG production centre on the Burrup Peninsula in Western Australia. We are progressing development of the Scarborough and Browse gas resources through our existing producing assets, the Woodside-operated Pluto LNG and North West Shelf Project. We also have a participating interest in Wheatstone LNG.

The LNG we produce is a low-emissions and economically viable fuel for markets across the globe.

Technology and innovation are essential to our long-term sustainability. We are pioneering remote support and the application of artificial intelligence, embedding advanced analytics across our operations.

We are committed to upholding our values of integrity, respect, discipline, excellence, working sustainably and working together. Our success is driven by our people and we aim to attract, develop and retain a diverse, high-performing workforce.

We recognise that enduring, meaningful relationships with communities are fundamental to maintaining our licence to operate.

## OUR AREAS OF ACTIVITY



### Product type

- Gas
- Oil
- Gas or oil

### Phase

- 🏠 Producing assets
- 🔧 Projects and developments
- 🔍 Appraisal and exploration

\*Denotes marketing office



# OUR PERFORMANCE

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**3.4%**

ENERGY EFFICIENCY  
IMPROVEMENT  
AGAINST BASELINE<sup>1</sup>

**1.32**

TOTAL  
RECORDABLE  
INJURY RATE  
PER MILLION WORK HOURS

**3.7%**

INDIGENOUS  
EMPLOYMENT

**30.4%**

FEMALE  
REPRESENTATION

1. Against baseline performance, measured relative to energy efficiency prior to 2016.

# MESSAGE FROM OUR SUSTAINABILITY COMMITTEE CHAIR

As Woodside enters a growth phase, our commitment to sustainability guides us.

We know that it is only through taking a responsible and long-term approach that we can deliver value for our shareholders and our communities.

This approach informs decision-making at all levels of our business. For us, sustainability is a core part of our corporate culture and integral to our daily operations. It's not an optional extra. It is, quite simply, who we are and how we do things.

In this report, we explain how sustainability is interwoven through all of Woodside's activities, shaping our approach, our people, our environment and our future across our global activities.

It's evident in the economic contribution we make. We help sustain the economy by employing thousands of people and paying our taxes. In addition to paying almost A\$900 million in taxes and royalties in Australia in 2018, we contributed millions of dollars to groups that sustain and enrich our communities. Our growth plans ensure this economic and social engagement will continue as our projects create opportunities throughout the value chain.

It's evident in our commitment to be good stewards of the environment. This is our starting point as we pursue environmental approvals for our new projects, with the aim of managing and minimising our environmental impacts.

We take climate change seriously: we are working hard to deliver innovative energy solutions and to manage our own carbon emissions. Companies like ours have a big role to play in delivering the extra energy that the world needs while enabling the transition to a lower carbon economy. Natural gas, as a cleaner-burning fuel, will be crucial to achieving these global goals. Gas accounts for most of Woodside's production and our growth portfolio.

Our commitment to sustainability is evident in the long-term relationships we forge in our communities, including with Indigenous people. As a company, we are on a journey and find ourselves at a very exciting point, with opportunities ahead. To realise those opportunities, we need to walk side by side with communities as we deliver our growth plans and the shared benefits that result.

In all our endeavours, we prioritise safety, devoting significant time and resources to prepare our staff for potential disruptions



**Ann Pickard**  
Chair of the Sustainability  
Committee

to operations and to minimising the risk of their occurrence. The safety of our staff, and of the many contractors and suppliers who work alongside us, is vitally important.

As a committee, we support the company's ongoing commitment to sustainability. This is crucial to both our daily operations and to the delivery of our growth plans that require responsible environmental management and deep engagement with communities.

## BOARD SUSTAINABILITY COMMITTEE

Ann Pickard

Melinda Cilento

Christopher  
Haynes, OBE

Ian Macfarlane

Sarah Ryan

Larry Archibald

# MESSAGE FROM OUR CEO

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Our focus is on the future as we pursue growth plans that will set Woodside's path for decades to come.

Big investment decisions like those we face in the years ahead require us to think about how the world is changing and our role in it.

Changes are underway in energy markets as the world tries to reduce emissions while extending access to modern energy.

We think natural gas has a big role to play, as the cleanest burning fossil fuel and ideal partner for renewables. On the Burrup Peninsula, where sunlight is plentiful, we are developing options for integrating gas-fired and solar power to supply our operations.

We know we need to do more to manage our own emissions. We are taking a company-wide approach to abatement and have a dedicated team leading our efforts to offset emissions. We have committed to improving the energy efficiency of our operations and are a signatory of the World Bank Zero Routine Flaring Initiative and the Methane Guiding Principles.

We are pleased that in 2018 we beat our emissions reduction target, through a combination of high reliability, reduced flaring and improvements to our facilities.

Our growth plans have implications for the communities where we are active. We have built long-term relationships with our host communities in Western Australia and intend to continue to engage respectfully as we execute our growth plans.

We bring the same approach to our community engagements, whether in Karratha, Senegal or Myanmar. As a values-led company, we talk with our staff about the importance of operating with transparency and integrity.

Health and safety is paramount in our industry and we have stepped up our efforts to engage all parts of the workforce. As our activity increases in 2019, we must be vigilant to ensure the safety of our staff and those who work alongside us.

As a company, sustainability is part of everything we do and will continue to inform our decisions and actions as we grow our operations. I would like to thank our staff for their commitment and Ann Pickard and the Sustainability Committee for overseeing our company-wide efforts. I also extend my gratitude to all those in the community who have engaged with us and continue to do so.



**Peter Coleman**  
*Chief Executive Officer  
and Managing Director*

SUSTAINABILITY  
IS PART OF  
EVERYTHING  
WE DO



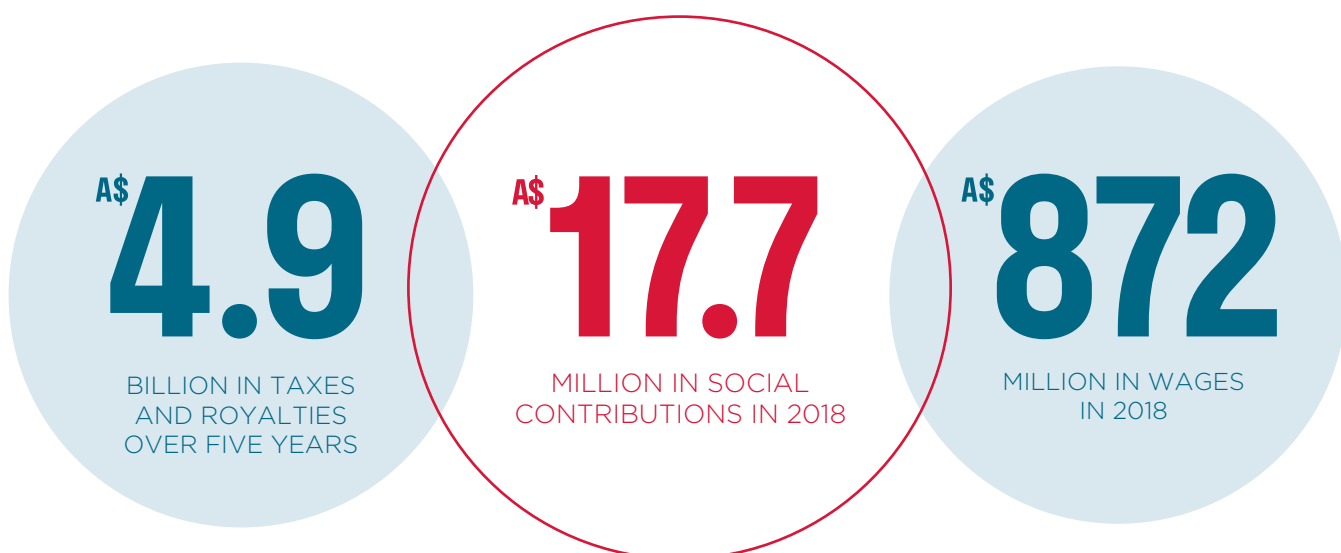
# ECONOMIC BENEFITS

We have a strong history of generating economic benefits, helping to develop communities where we are active and providing sustainable energy to customers.

Economic benefits were provided to many stakeholders in 2018: from the dividends paid to shareholders to the wages we paid employees, the taxes and royalties we paid to governments, and contributions made to local communities through employment and contracting opportunities, partnership agreements, employee volunteering and direct funding.



WE ARE PROUD OF OUR  
ECONOMIC CONTRIBUTION



1. Figure converted from \$US as at 31 December 2018



# PRINCIPLES AND U.N. SDGs

Working sustainably is one of our Compass values. This means we are here for the long term, we look after each other, our communities and the environment and we keep each other safe.



The 17 U.N. Sustainable Development Goals (SDGs) came into effect in 2016, tackling the world's most pressing economic, environmental and social issues. In 2018, we developed a strategy focused on the five SDGs that best align with our business operations and value chain, outlining our aspirations and deliverables.

SDG	ASPIRATIONS	DELIVERABLES
 <p><b>7</b> AFFORDABLE AND CLEAN ENERGY</p>	We will continue to supply LNG to displace coal and support intermittent renewables. We will also support the creation of LNG markets for transportation and remote power, and investigate low-carbon energy sources.	<ul style="list-style-type: none"> <li>+ Commence deliveries of trucked LNG from Pluto in 2019</li> <li>+ For direct emissions, improve energy efficiency by 5% against baseline by 2020<sup>1</sup></li> <li>+ Eliminate routine flaring from our oil facilities by 2030</li> </ul>
 <p><b>9</b> INDUSTRY, INNOVATION AND INFRASTRUCTURE</p>	We will continue to improve productivity and energy efficiency by embracing technology and innovation, and incorporating renewables at our assets.	<ul style="list-style-type: none"> <li>+ Improve our operations through adoption of more efficient technologies, and improvements in industrial processes, to meet our energy efficiency target</li> <li>+ Explore opportunities to incorporate renewable power generation into our portfolio</li> </ul>
 <p><b>13</b> CLIMATE ACTION</p>	We collaborate with partners, peers and stakeholders for a competitive, low-carbon economy and support initiatives that improve climate change resilience.	<ul style="list-style-type: none"> <li>+ Continue to partner with academia to find new technology that unlocks affordable new energy and profitable carbon abatement</li> <li>+ Promote the World Bank's Methane Guiding Principles initiative</li> <li>+ Advocate for a global carbon price</li> <li>+ Collaborate with peers to assess the commercial feasibility of LNG as a marine fuel between the Pilbara and North Asia</li> </ul>
 <p><b>14</b> LIFE BELOW WATER</p>	We uphold robust environmental management and process safety practices to minimise our impact on marine environments, and partner with research institutions to contribute to knowledge of these areas.	<ul style="list-style-type: none"> <li>+ Maintain partnerships with research institutions to contribute to knowledge of marine environments in areas where we are active</li> <li>+ Maintain memberships with global oil spill response organisations who provide access to world-leading spill response capabilities and technologies</li> </ul>
 <p><b>17</b> PARTNERSHIPS FOR THE GOALS</p>	We work together, combining our distinctive capabilities to deliver the best possible result. We aim to be the partner of choice wherever in the world we operate.	<ul style="list-style-type: none"> <li>+ Continue to partner with peers, governments, academia and civil society groups to advance progress towards the goals</li> <li>+ Leverage opportunities through existing partnerships and joint venture participants</li> </ul>

1. Baseline performance is measured relative to energy efficiency prior to 2016.

# MATERIALITY

Woodside considers sustainability topics to be material if they reflect our significant economic, environmental and social impacts, or if they significantly influence the assessments and decisions of our stakeholders.

Each year, we conduct a materiality assessment to identify and understand the sustainability topics of significance to our key stakeholders and our business. The materiality assessment informs the development of this report and ensures we are adequately responding to topics considered key to our stakeholders.

In 2018, our materiality assessment identified topics of concern, four of which were considered material: health and safety performance, social and cultural impacts on communities, climate change and greenhouse gas emissions, and fraud, anti-bribery and corruption.

The inclusion in this list of social and cultural impacts on communities reflects the growing interest in our growth projects and a broader societal concern about how local communities benefit from business activities.

Major incident prevention and response, while material in 2017, were no longer considered material by external stakeholders but remain a focus for Woodside.

🔗 Refer to the materiality section of our website for more information.







\*Denotes 2018 material topic.

# SUSTAINABILITY TARGETS

We set annual targets to measure our performance on material sustainability topics and challenge ourselves to do better.

Our sustainability targets are included in our corporate scorecard, corporate Executive Committee dashboard, and divisional and functional performance agreements.

MATERIAL TOPIC	2018 TARGET	2018 PERFORMANCE	2019 TARGET
 Health and safety performance	Demonstrate continuous improvement on 2017 to deliver leading health and safety performance	<b>1.32 TRIR</b>	Demonstrate continuous improvement on 2018 to deliver leading health and safety performance
 Social and cultural impacts on communities	<i>Topic was not considered material in 2017</i>	<b><i>Topic was not considered material in 2017</i></b>	Social impact management plans for communities where we are active  Positive progress against our 2016–2020 Reconciliation Action Plan
 Climate change and greenhouse gas emissions	Sustainable emissions reductions of 80 kt CO <sub>2</sub> e against baseline	<b>Delivered 138 kt CO<sub>2</sub>e sustained emissions savings in calendar year<sup>1</sup></b>	Achieve 4% energy efficiency improvement against baseline <sup>2</sup>
 Fraud, anti-bribery and corruption	Zero violations of anti-bribery and corruption laws within or in connection with Woodside	<b>Zero violations of anti-bribery and corruption laws within or in connection with Woodside</b>	Zero material violations of anti-bribery and corruption laws within or in connection with Woodside
 Major incident prevention	Zero Tier 1 Process Safety Events (PSEs) and two or fewer Tier 2 PSEs	<b>1 Tier 1 PSE and 1 Tier 2 PSE</b>	<i>Topic was not considered material in 2018</i>
 Major incident response	95% Global Assurance Benchmark Spill Preparedness rating – Readiness Evaluation Tool for Oil Spills (RETOS 2)	<b>100% Global Assurance Benchmark Spill Preparedness rating achieved (RETOS 2)</b>	<i>Topic was not considered material in 2018</i>

1. Includes both absolute emissions reductions and energy efficiency improvements of delivered projects

2. 2019 target of energy efficiency improvement against baseline performance (%) is measured relative to energy efficiency prior to 2016. This aligns with Woodside's aim to improve energy efficiency by 5% by 2020, and includes both absolute emissions reductions and energy efficiency improvements of delivered projects. Sustainable emissions reductions, fuel and flare targets will still be monitored for performance. Refer to page 26 for more information.



# GOVERNANCE

We believe that adopting and operating in accordance with high standards of corporate governance is essential for sustainable long-term performance and value creation.

## Governance

Our approach to sustainability is incorporated in our management system including our policies, procedures and Code of Conduct (the Code).

Woodside's Board of Directors has oversight of the company's management and business activities. The Sustainability Committee assists the Board to meet its responsibilities in relation to the company's sustainability policies, expectations and procedures. The Sustainability Committee, as at 31 December 2018, was comprised of six independent, non-executive directors.

For more information on our corporate governance model, refer to the Annual Report 2018.

## Identifying and managing risk

Risk is inherent in our business. It is crucial that we maintain a robust and disciplined focus on operational excellence and effective risk management.

By understanding and managing our risks, our business is able to perform effectively and provide protection to our people, communities and the environment. We systematically assess the consequence of risk in areas such as health and safety, environment, and social and cultural impacts.

Woodside's Audit & Risk Committee oversees our Risk Management Policy and is responsible for satisfying itself that management has developed and implemented an effective risk-management system and internal controls.

The Board maintained oversight of material topics during 2018, and monitored emerging issues and risks.

Refer to page 8 for more information on the materiality process and 2018 material topics.

For more information on Woodside's key governance and risk-management principles and practices, refer to our Corporate Governance Statement.

## Business ethics

Our core values of integrity, respect, discipline, excellence, working sustainably and working together are set out in the Woodside Compass. These values underpin the Code, which sets out our commitment to ethical business principles.

In 2018, the Code was updated with clearer requirements on training for service-provider personnel and further guidance on the management of employee external commitments. The Code was also translated into French in support of our operations in Senegal.

It is the responsibility of every director, employee and contractor to be familiar and comply with the Code. All employees undergo mandatory training on the Code when they join the company and annual compliance training thereafter. Records of training are maintained by Woodside's General Counsel.

All directors, employees, and contractors are required to report potential violations of the Code. All breaches are recorded, investigated and the outcomes reported to the Board. Appropriate disciplinary action is undertaken if violations are substantiated, up to and including termination of employment.

Our Whistleblower Policy outlines processes for responding to allegations of misconduct. Employees and our stakeholders have access to a confidential, externally-managed helpline for reporting misconduct. All calls are referred to the General Counsel for investigation as appropriate. There were 11 reports to the confidential helpline in 2018.

Code of Conduct investigations are overseen by a senior management steering group. Our Audit & Risk Committee reviewed reports on misconduct investigations, breaches of the Code, and matters reported to the external helpline.

There were 120 allegations of improper behaviour or breaches of the Code investigated in 2018. Sixty four allegations were substantiated and 56 were unsubstantiated. A further 11 allegations remain under or pending investigation. Outcomes for the employees and contractors responsible for the substantiated breaches include 11 contracts being terminated or not renewed, 11 written warnings and 23 verbal warnings. Three terminations were fraud-related.





**OUR PEOPLE**

MATERIAL TOPIC

# HEALTH AND SAFETY PERFORMANCE



Woodside’s health and safety (H&S) performance is essential to our success and growth. We are committed to managing our activities to protect our people and our host communities.

## 2018 HIGHLIGHTS

- + Perfect HSE (Health, Safety and Environment) Day discussions in our operations have led to a visible improvement in safety culture and performance, achieving our best operations safety performance to date
- + Global Institute of Chemical Engineers Award winner for enabling improvement in process safety through data analytics
- + Australian Petroleum Production and Exploration Association Safety Excellence Award winner

## OPPORTUNITIES

- + Implement the safety perception survey improvement plan to mature safety culture
- + Strengthen H&S leadership capability across the business, including with our contractors and suppliers
- + Further embed mental wellbeing culture across the organisation

## RISKS

- + Failure to maintain a healthy and safe workplace
- + Failure to engage with our contractors and suppliers to improve H&S outcomes
- + Failure to deliver a trusting, safe work culture with our employees

## Our approach

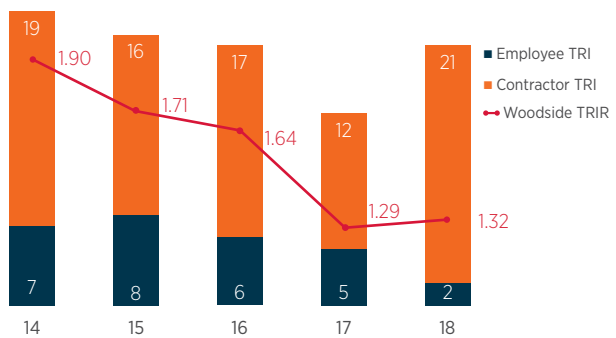
Woodside aims to continuously improve towards the goal of achieving industry-leading H&S performance. In 2018, we achieved a total recordable injury rate (TRIR) of 1.32, just over our target of 1.30.

In response to declining H&S performance in early 2018, we collaborated with our contractors through a leadership forum to develop innovative solutions. In 2019, we continue to progress these solutions including hosting an intensive two-week safety activity with our key contractors to identify ways to prevent injuries.

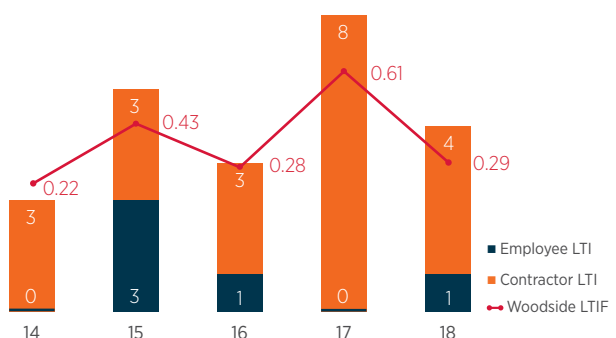
In 2018, our lost time injury frequency improved by 52%. Our high potential incidents have reduced by 46% and the identification of high potential hazards has improved by 54%.

[i](#) Refer to the case study on page 14 for more information.

**Total recordable injuries (TRI) and total recordable injury rate (TRIR)**



**Lost time injuries (LTI) and lost time injury frequency (LTIF)**







### Safer Together

We played a leading role in steering industry-wide engagement and collaboration to support the formation of the new Safer Together industry group for Western Australia and the Northern Territory (WA/NT). Modelled on the success of the Safer Together Queensland organisation, the group aims to deliver sustainable industry safety-performance improvement.

Safer Together WA/NT has more than 60 company members across the oil and gas value chain and is led by 20 senior in-country leaders from operators and contractors. In September 2018, we chaired the inaugural forum in Perth, which attracted more than 150 attendees.

### Our safety culture

A strong HSE culture where people go “beyond the call of duty” to keep each other safe and protect the environment is critical to sustaining performance improvements.

In 2018, we conducted a safety culture survey across the company to understand our people’s perceptions and attitudes to safety. The survey measured our safety culture maturity, allowing benchmarking across sites and against best-practice organisations. We had a strong response to the survey with more than 2,600 employees and contractors participating. While the results showed we are on par with our industry average, we are not where we would like to be. In response, we have identified improvement areas and integrated these into our future activity plans.

We strongly believe in building a safety culture in which our people are empowered to take action to prevent injuries and thoroughly investigate incidents. We will focus on strengthening H&S leadership, increasing recognition and off-the-job safety awareness in 2019.

We continued to engage our workforce in Perfect HSE Day discussions, raising situational awareness and the risk profile of tasks at hand each day.

We also developed a new framework to improve our HSE representatives’ competencies, skills and awareness through structured collaboration. The program ensures our HSE representatives feel supported and confident in their role as HSE leaders. This helps attract passionate and motivated individuals to improve HSE culture and performance across the business.

## HEALTH AND SAFETY PERFORMANCE

### CASE STUDY

#### Enhancing incident investigations

A key element of Woodside's health, safety and environment (HSE) management system is having processes in place to investigate and learn from incidents and hazards. To prevent reoccurrence we must learn from every event and address the root cause.

Over the past two years we implemented these improvements:

- + Simplified and improved the investigation methodology and tools to provide greater clarity of requirements to the investigators
- + Developed the investigative capability within the business to improve the quality of investigations

- + Ensured similar risks in other parts of the business were also investigated and addressed
- + Increased emphasis on exploring human factors and understanding the behaviours that may have contributed to the event
- + Enabled the use of tools, including our intelligent digital research assistant, to interrogate historical event data
- + Management review of the investigation outcomes to ensure they are supported and prioritised.

Our 2018 safety culture survey identified "thoroughness in investigation of injuries and incidents" as a key strength. Our future focus is to further embed these improvements.



### CASE STUDY

#### A workplace that promotes wellbeing

A transformative focus was placed on the design of the working environment for Woodside's new Mia Yellagonga campus in Perth. This philosophy combines physical and mental wellbeing requirements to create a collaborative workplace where people can perform at their best and feel happier, stay healthier and enhance the blend of work and life.

The design of Mia Yellagonga maximises the use of natural light combined with visual and physical ergonomics to create a vibrant working environment to encourage collaboration and connectivity. An on-site allied health support service

improves our people's accessibility to health services at work. The breadth of wellness facilities encourages participation in physical activities including swimming, cycling and use of gym facilities.

The campus was designed to welcome family members and includes shared spaces for our community partners. Connecting business performance with human effectiveness builds and maintains social, family and community relationships. This is an active psychosocial risk management approach.

**Process safety**

Process safety describes a framework for managing asset integrity across the value chain through disciplined application of systems and processes.

With assets operating across the life cycle from start-up through life extension and into decommissioning, Woodside defines and applies rigorous maintenance schedules to manage the integrity of our structures, equipment, piping and wells to minimise the risk of loss of containment, or hydrocarbon release.

**Our approach**

In 2018, we continued to embed process safety through a risk-based approach, focusing on visible leadership and operational discipline. We also continued our process safety competency program to ensure our people have the skills to manage process safety risks.

Woodside proactively identified risks through continuing HAZOP (hazard and operability study) and LOPA (layers of protection analysis) for our assets.

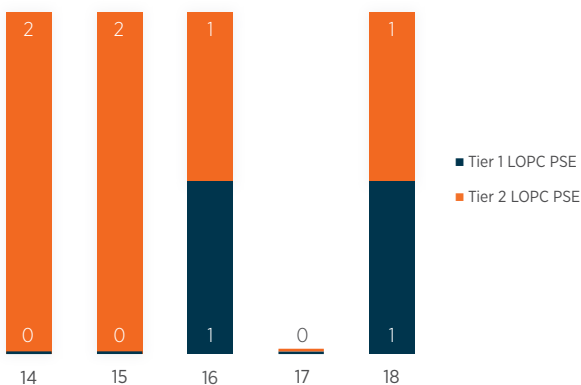
To drive further process safety improvements, we aligned our process safety framework with our company-wide management system to ensure a consistent delivery across our operations and projects. This will be implemented in 2019 and will help identify focus areas and prevent process safety events.

**Our 2018 performance**

Woodside categorises and reports process safety events (PSE) against the American Petroleum Institute Recommended Practice 754 (API 754).

During the year, there was one Tier 1 and one Tier 2 loss of primary containment PSEs. Both were internally investigated and reported to the regulator. Root causes and actions were identified to prevent recurrence.

**Tier 1 and 2 loss of primary containment process safety event (LOPC PSE)**



The Tier 1 PSE in 2018 involved the release of crude oil product in a pump room, with no injuries sustained or release to the environment.



**CASE STUDY**

**Bespoke training avoids plant trips**

Unplanned temporary shutdowns of our LNG facilities, or ‘trips’ as they are commonly called, are an important safety measure but can interrupt production, increase flaring, reduce energy efficiency and require significant resources to restore normal operations.

To reduce the likelihood of a trip, our plant operators developed trip mitigation training sessions for our Karratha Life Extension (KLE) contractors. The hands-on training courses were delivered in a decommissioned section of the plant to create a real-life training environment, educating contractors on the potential hazards of their work environment and how they may unexpectedly trigger a plant trip through maintenance activities such as erecting or removing scaffolding.

Since introducing the training in April 2018, 86% of our KLE contractors completed the course and there have been no related plant trips.



# PEOPLE, CAPABILITY, INCLUSION AND DIVERSITY

An engaged and enabled workforce underpins our ability to deliver superior shareholder returns. We recognise that a key contributor to our success is an inclusive culture that increases a sense of belonging.

## 2018 HIGHLIGHTS

- + Announced a transition to a predominantly residential operational workforce in Karratha
- + Increased female and Indigenous workforce representation
- + Increased membership of inclusion and diversity community groups

## 2019 PRIORITIES

- + Progress transition to a predominantly residential operational workforce in Karratha
- + Progress RAP priorities
- + Enhance diverse workforce representation
- + Increase technical discipline opportunities

## Inclusion and diversity

In 2018, we progressed our 2016–2020 Elevate Reconciliation Action Plan (RAP) and commenced an updated three-year inclusion and gender diversity strategy.

We maintain a continued focus on enabling and engaging women at all stages of their career and investing in a pipeline of female talent. Overall female representation increased from 29% in 2017

to 30.4%, comparing favourably against our industry average. Voluntary turnover reduced from 4.5% in 2017 to 3.6% and the return rate from parental leave remains high at 97%.

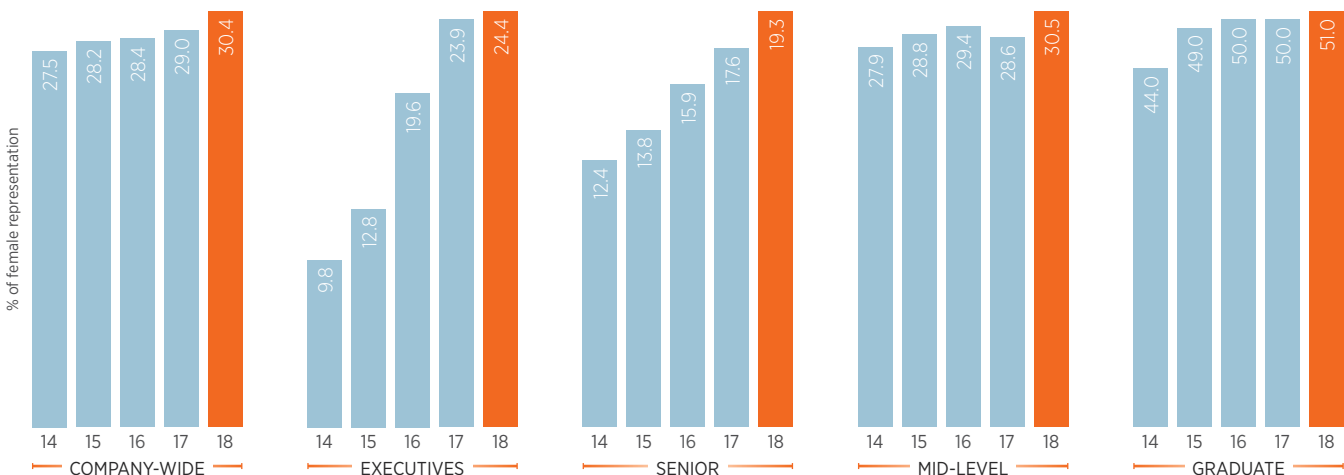
We continue to improve diversity within the workforce, primarily through our development programs. The overall percentage of females in our intake for the 2019 graduate development program increased to 51%, including 50% females in technical roles.

Initiatives to build Woodside’s culture of inclusion have been promoted through our community groups such as Woodside Reconciliation Community (WRC), Gender Equality Matters (GEM) and our LGBTI network, Spectrum. In 2018, all groups achieved growth in membership across our locations.

We increased our directly employed Indigenous workforce year-on-year. In 2018, we directly employed 130 Indigenous employees (3.7% of the total workforce), compared to 117 in 2017 (3.3% of total workforce). Voluntary Indigenous turnover remained steady at 2.4%.

Much of this positive growth in, and retention of, our Indigenous workforce has been driven through our sustainable pathways programs, strong graduate intake and ongoing engagement. In 2018, we had 31 Karratha-based Indigenous apprentices and trainees, 12 Indigenous vacation students undergoing tertiary study and work placement and 8 Indigenous candidates on the graduate development program. To support community-based careers and future employment opportunities within Woodside, we awarded 34 Indigenous scholarships, up from 21 in 2017.

## Female representation



CASE STUDY

**Driving an inclusive culture**

Woodside is proud to report on recent achievements of our three inclusion and diversity community groups in 2018.

Gender Equality Matters (GEM) and Spectrum (LGBTI+ and allies) promote a positive and inclusive workplace culture by raising awareness of, and addressing, gender- and sexuality-based discrimination and inequality. Woodside Reconciliation Community (WRC) fosters cross-cultural dialogue with our Indigenous stakeholders both in the company and in our communities.

Together, these employee-driven initiatives provide an environment for learning and sharing stories in a respectful and engaging way.

**GEM**

GEM is a broad community of over 1,000 Woodside staff, male and female, who are committed to lifting the bar on gender equality and inclusion. Formerly named Women of Woodside, GEM has experienced a significant membership increase of 18%, exceeding the stretch goal of 10% annual growth. Male membership now represents 28% of GEM, compared to 5% in 2017 and men are now joining GEM at a greater rate than women. This outstanding achievement highlights the influence of “Man Up” (a male-run GEM sub-committee), and a name-change to more explicitly describe the purpose and inclusive nature of the group.

**Spectrum**

Spectrum membership has also grown by 21% indicating an increasing influence of the group. In the past 18 months, Spectrum has hosted 12 LGBTI+ ally training sessions reaching 500 Woodside employees, and launched ally lunches providing a safe place for allies to share challenges and insights.

Spectrum proudly participated in the Australian Ally Conference and our Perth headquarters, Mia Yellagonga, was lit up for Wear it Purple Day. We also participated in the Australian Workplace Equality Index, allowing, for the first-time, evaluation of our LGBTI inclusion by a national body, Pride in Diversity. Demonstrating its success, Spectrum was announced as a finalist for ‘New LGBTI Employee Network’ in the 2019 Australian LGBTI Awards.

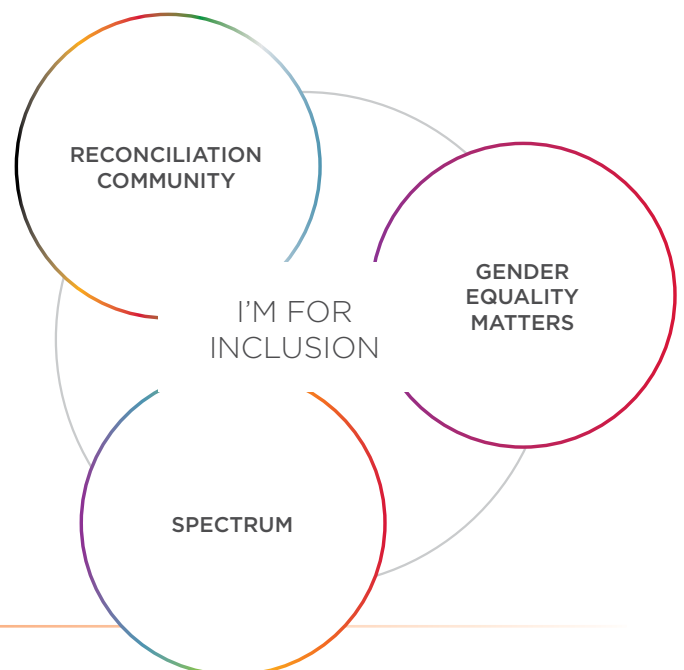
**WRC**

The WRC hosted numerous events aimed at raising awareness of reconciliation issues, sharing cultural knowledge and connecting people.

A highlight was the collaborative effort with the Woodside Indigenous Collegiate and the Woodside Headquarters Project Team to bring Mia Yellagonga to life on the final day of NAIDOC Week. This marked a significant milestone in the relationship between Woodside and the Noongar community, with a cleansing of the site by Whadjuk elders and leaders prior to the move to the new campus. In the spirit of NAIDOC Week, various celebrations were held after the cleansing ceremony to showcase Indigenous cultures.



Woodside staff at the 2018 Perth Pride Parade



## PEOPLE, CAPABILITY, INCLUSION AND DIVERSITY

### Leadership and development

We are committed to developing our people, focusing on experience and coaching, and providing development programs to ensure we have the capability required to sustain growth.

In 2018, we refreshed our leadership framework. New leadership expectations were aligned with the refreshed Compass and increased focus on the capabilities required to deliver our business strategy. Several new leadership development programs were launched to enable all employees to access learning opportunities and build them into their development plans.

### Karratha workforce

Recognising our growth projects will result in operations on the Burrup for up to 50 more years, we are focused on growing our residential workforce in Karratha.

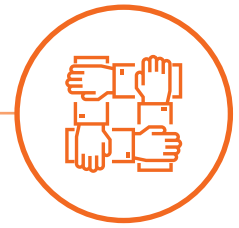
In December 2018, Woodside advised employees that Karratha Gas Plant and Pluto LNG would transition to a predominantly residential operating model, enabling our people to live where they work and build a strong team and community connection. In support of this transition, we are also progressing plans to provide our people with the opportunity to purchase their company-provided housing in Karratha.





MATERIAL TOPIC

# SOCIAL AND CULTURAL IMPACTS ON COMMUNITIES



Woodside supports and engages with our communities to create a sustainable future.

## 2018 HIGHLIGHTS

- + Completion of environment and social impact assessments (ESIA) in Senegal and Myanmar
- + Launch of the Karratha Jobs Portal
- + Positive progress against the 2016–2020 Elevate Reconciliation Action Plan

### OPPORTUNITIES

- + Deliver economic benefits through local employment and contracting opportunities
- + Continue engagements with Indigenous stakeholders to facilitate growth projects including the review of existing and new agreements
- + Enhance community capacity building to support our growth projects
- + Target social investments to address community impact areas

### RISKS

- + Failure to identify, understand and manage key external stakeholders
- + Failure to maintain our social licence to operate
- + Inadequate management of social contributions
- + Potential disturbance to cultural practices and preservation

We've built genuine and long-term relationships with our stakeholders and host communities over more than 60 years. As our business expands internationally, we are transferring our learnings from Australia to build similar strong relationships with our host communities overseas.

### Our approach

We understand our operations can impact the social and cultural wellbeing of the communities where we are active. For this reason, we endeavour to understand and minimise any negative impacts and enhance positive impacts through meaningful engagement.

Our interactions with the communities are guided by our Sustainable Communities Policy, which applies to all activities under Woodside operational control. Our managers promote the policy in joint ventures where we are not the operator. In these circumstances, we complete due-diligence of the

business opportunity prior to entry and also review key studies conducted by the operator on behalf of the joint venture to ensure alignment with our policy.

Our Community Relations Charter provides a robust framework to manage stakeholder relations, expectations and issues in a respectful, values-driven way.

We conduct SIAs for all major development activities and use five-yearly social scans to inform our management plans as appropriate.

### Meaningful engagement

We emphasise open and transparent communication and feedback on our activities.

To support our ongoing operations in Western Australia, we hosted four community liaison group meetings in Karratha and participated in three joint-operator meetings in Exmouth in 2018. These engagements help us to better understand community perspectives on issues such as job creation, local contracting opportunities, environmental impacts and to communicate operational and development activities.

We regularly engage with our social investment partners, government representatives, civil society organisations and local businesses in these regions and our international locations of Senegal and Myanmar.

### Effectively addressing community concerns

Our Community Grievance Mechanism Procedure provides a framework for receiving, responding to and closing out grievances in a consistent manner.

We received four grievances from community stakeholders in 2018. Two of these related to the location of construction vessels in the Exmouth Gulf and the change in the fixed-wing flight schedule in Exmouth. Work to resolve these concerns is ongoing.

We also received correspondence from local government in Karratha in relation to several local concerns, including vacant housing and plans for a short-term accommodation facility, which were addressed via consultation.

During the year we strengthened our grievance mechanism procedure to define communication channels, grievance priority levels and their associated reporting requirements.

## SOCIAL AND CULTURAL IMPACTS ON COMMUNITIES

### Understanding and managing our impacts

We completed SIAs in Karratha and Roebourne in 2017, which identified housing, local employment and business opportunities as key community impacts of our operations on the Burrup. In line with this, we delivered a housing strategy to manage properties in the City of Karratha and introduced employment and contracting initiatives, including launching the online Karratha Jobs Portal.

📄 Refer to the Half-Year Report 2018 for more information on the Karratha Jobs Portal.

The redevelopment of the Bay Village accommodation facility in Karratha was informed by a social impact management plan to enhance community integration. Bay Village is planned to be a 604-bed modern, landscaped village with a nightly shuttle bus and a social integration coordinator to support links with the local community.

In October 2018, we commenced SIAs and a community perception survey for our Burrup Hub developments. The SIAs will assess the direct and indirect social effects of the Burrup Hub projects and identify strategies to address the issues, impacts and opportunities raised by the community. Preliminary consultation on the potential impacts was completed in Broome, Karratha and Roebourne in late 2018.

In support of our SNE field development in Senegal, Woodside led an ESIA, which involved a suite of comprehensive environmental studies and consultation with more than 50 local coastal communities to inform a social baseline survey. The ESIA identified key environmental impacts associated with proposed development activities and socioeconomic impacts, including

employment and local content opportunities, potential shipping disruption and limited impact to fishing communities. Mitigation measures for these impacts are outlined in the ESIA.

Woodside continues to engage communities in Myanmar to inform the planning and execution of our activities. These engagements have suggested there was likely to be very little, if any, interaction between Woodside's offshore exploration activities and local fishing activities. Subsequent drilling operations have had minimal interaction with offshore fishing vessels.

📄 Refer to the consultation documents on our website for more information.

### Enhancing local opportunities

We are focused on local training and employment initiatives in the Pilbara. Our training provider, Programmed, recruited 44 local people for training and apprenticeships and the North West Shelf housing refurbishment program head contractor engaged 25 local sub-contractors and 51 Indigenous employees.

In Senegal we have progressed capacity-building opportunities including supporting Invest in Africa's establishment, a not-for-profit organisation focused on supporting local suppliers to gain access to skills, contracts and finance; and the establishment of the Senegalese Government's Institut National du Pétrole et du Gaz to train future leaders in the petroleum industry, while creating a technical workforce that can compete on a global scale.

We are also helping to build local knowledge and capacity in Myanmar through a partnership with Yangon Technological University (YTU) that provides practical work experience for petroleum engineering students. We also support a professional development program delivered at YTU by Western Australia's Curtin University.





### Our Indigenous communities

Woodside understands the importance of identifying and working with people who have cultural connections to the land and waters where we are active. This is embedded in our Indigenous Communities Policy.

Similarly, we demonstrate respect and act with integrity to support economic, social and cultural outcomes for Indigenous people.

In Western Australia, we maintain relationships with Indigenous communities in the Pilbara, Kimberley and South West regions.

We host regular and meaningful engagements with key Indigenous stakeholders on our current activities in Western Australia and our Burrup Hub growth plans. These engagements reflect our intention to manage and minimise the impacts of our operations and enhance outcomes in the areas of cultural heritage, education, training, employment, social investment and community wellbeing.

### Reconciliation Action Plan (RAP)

Woodside has been part of Reconciliation Australia's RAP program since 2009 and reconciliation activities are now integral to the way we do business. Our current 2016–2020 RAP was awarded 'Elevate' status by Reconciliation Australia for its focus on outcomes tailored to business needs and guided by host communities.

Throughout 2018 we continued to make positive progress against our 2016–2020 Elevate RAP, with particular improvements in Indigenous business participation in Woodside projects. The 2018 RAP Report will be released in May 2019.

Cultural awareness training was undertaken by more than 400 Karratha production employees and 54 employees participated in Noongar Indigenous language sessions.

We have also embraced cultural recognition at our new Perth headquarters by incorporating Indigenous names for areas of the campus, using the colours of the six local Indigenous seasons in the fit-out and hosting traditional smoking ceremonies.

### Cultural heritage

Woodside has operated gas and LNG facilities on the Burrup Peninsula, known as Murujuga, for more than 30 years. We value the relationships we have built with the traditional owners in this time. With input from traditional owners, we have developed and implemented comprehensive cultural heritage management plans to ensure the heritage values of the area are protected.

We participated in the Western Australian Government's newly formed Murujuga Rock Art Stakeholder Reference Group. The group aims to provide advice on the design, implementation and analysis of scientific monitoring, consult other stakeholders and inform the Government's broader consideration of the protection of rock art on Murujuga.

We make significant efforts to monitor and manage our environmental impacts on cultural heritage, including rock art. We conducted an annual heritage audit of Pluto leases on the Burrup Peninsula that found no disturbance to any cultural heritage sites. Anthropological surveys, involving senior men and women traditional owners, were conducted over leases at KGP and adjacent areas. The outcomes of these surveys continue to inform our understanding of the cultural heritage values within our lease areas and enhance the ongoing management and conservation of these significant areas.

Coastal cultural heritage in Senegal was also considered as part of the SNE field development ESIA. Due to the distance of the development from the coastline, coastal cultural heritage is not expected to be impacted during routine operations.



**SOCIAL AND CULTURAL IMPACTS ON COMMUNITIES**

**Social contribution**

In 2018, Woodside contributed A\$17.7 million to communities via our strategic partnerships, the Woodside Development Fund and philanthropic contributions including the value of employee time spent volunteering. This was in addition to the leveraged spend<sup>1</sup> of A\$19.3 million contributed through our joint ventures, employees, government funding partnerships and other co-funded initiatives Woodside is involved in.

We continued to work with communities, governments and industry to support our three key outcome areas. These aim to create opportunities, improve knowledge and build the resilience of the communities where Woodside is active. To achieve these outcomes, we have aligned our social contribution approach across four focus areas: education and early childhood development; environment; technology and innovation; and arts, culture and community.

1. Additional resources contributed to a community organisation or activity that come from sources other than Woodside.



27%

ARTS, CULTURE AND COMMUNITY

Arts and culture partners Barking Gecko Theatre Company and the West Australian Ballet extended programs to include performances and educational workshops in Karratha, Dampier and Roebourne. These activities reached more than 700 young people during 2018.



40%

EDUCATION AND EARLY CHILDHOOD DEVELOPMENT

The Dampier Peninsula Family Empowerment Partnership played an integral role in the formation of steering committees representing family kinship groups across the Peninsula area. The project is a key platform and pilot strategy, influencing change to create a unified approach to improve outcomes for children aged up to eight years.



2018 SOCIAL INVESTMENT BY FOCUS AREA

21%

INNOVATION AND TECHNOLOGY

A new Centre for Long Subsea Tiebacks was launched at the University of Western Australia. The Centre will build our understanding of the science behind hostile deep-sea conditions, enhance the economic feasibility of remote offshore prospects and generate innovative solutions to minimise environmental impacts.



12%

ENVIRONMENT

Woodside recognised 25 years of collaboration with the Australian Institute of Marine Science (AIMS) and 20 years with the Western Australian Museum (WAM) in 2018. Better understanding and management of reef systems are key outcomes of the AIMS Scott Reef monitoring program, one of the longest running coral reef programs in the Indian Ocean.



# HUMAN RIGHTS

Woodside is committed to conducting business in a way that respects the human rights of all people, including our employees, the communities where we are active and those working within our supply chain.

## 2018 HIGHLIGHTS

- + Integrated human rights considerations into our management system
- + Conducted awareness sessions for the Executive Committee and Board
- + Implemented the supply-chain human rights framework

## 2019 PRIORITIES

- + Deliver inaugural human rights training for employees
- + Address recommendations from the human rights risk assessment of our operations
- + Implement the supplier due-diligence process
- + Develop an approach to modern slavery supplier audits

## Our 2018 performance

### Maturing our approach

Woodside adopted its Human Rights Policy in 2017. To ensure the intent of the policy is embedded in all areas of the business, we continued to progress a number of initiatives. This includes integrating human rights considerations into our management system and the development of a training framework for our employees, executives and the Board. An external expert provided human rights and modern slavery awareness sessions to our Executive Committee and Board in late 2018 and an employee training module will be launched in early 2019.

We have commenced a human rights risk assessment on our exploration, development and production activities. The risk assessment will be finalised in early 2019 and is expected to help guide our future activities.



### Australian modern slavery legislation

The *Australian Modern Slavery Act 2018* was enacted into law in late 2018. The legislation requires Australian businesses with an annual revenue of more than A\$100 million to report annually on their efforts to identify and address modern slavery risks in their operations and supply chain.

We engaged with the Australian Government during the year in support of the legislation and we intend to report in line with the Act.

### Managing security

As a signatory to the Voluntary Principles on Security and Human Rights (VPSHR), we are committed to respecting internationally-recognised human rights security standards across all our operations.

We enhanced our security and human rights framework by developing standardised contractual requirements for security providers. We also conducted in-country assurance reviews, matured our risk assessment process and enhanced our due-diligence and conformity assessment processes for joint venture participants and security providers.

Over the course of the year, we also conducted VPSHR awareness sessions at six of our locations across Australia, Timor-Leste, Myanmar, the USA and Canada.

There were no reported human rights security incidents in 2018.

### Managing our supply chain

We commenced implementing a supply-chain human rights framework, with particular focus on high-risk suppliers specific to the oil and gas industry.

Our Supplier Code of Business Conduct was strengthened to explicitly outline our human rights expectations and we developed new human rights provisions for our contractual terms and conditions.

We also developed a standard modern slavery supplier-assessment questionnaire in collaboration with our peers, and a specific contract delivery requirement to incorporate into high-risk contracts. These new controls have already been implemented into our tender process for major fabrication packages for our growth projects.





# OUR ENVIRONMENT

MATERIAL TOPIC

# CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS



Woodside is taking action on climate change and we are motivated to be a key player in a clean energy future.

## 2018 HIGHLIGHTS

- + 3.4% energy efficiency improvement against baseline<sup>1</sup>
- + Reduced our flaring by 16.3% from 2017 (operated basis)
- + Signed the Methane Guiding Principles and conducted a gap analysis to identify and prioritise actions

### OPPORTUNITIES

- + Increased demand for lower carbon fuels, especially in sectors that have few zero-carbon alternatives
- + Climate change and air-quality policies encourage coal-to-gas switching
- + Gas as an ideal partner for renewables
- + Improving our energy efficiency to allow us to convert more reserves to saleable product

### RISKS

- + Reduced demand for our products and constraints to our ability to create and deliver shareholder value
- + Increased investor concerns and risk of reputational damage
- + Uncertainty around global carbon policy
- + Physical impacts of climate change

We are well positioned to play a role in a lower carbon energy future. Our LNG can displace coal-fired power generation and provide firming capacity to help resolve intermittency issues associated with renewable energy.

In 2018, we refreshed our climate change strategy to consider these risks and opportunities, which allowed us to deliver sustainable value by:

- + Continuing to focus on reducing our own emissions intensity
- + Maintaining and growing a long-term resilient portfolio
- + Advocating for a competitive, lower carbon economy.

Our goal is to improve our energy efficiency by 5% from baseline performance<sup>1</sup> by 2020, and develop new opportunities for LNG to displace higher-emission fuels. Beyond this, leadership attention has progressed to considering sustainable and resilient longer-term targets.

1. Baseline performance is measured relative to energy efficiency prior to 2016.

## Reducing our emissions

Woodside's Scope 1 operated emissions decreased in 2018. Our overall Scope 1 equity emissions increased due to a full-year of LNG production and commissioning of Train 2 at the non-operated Wheatstone Project.

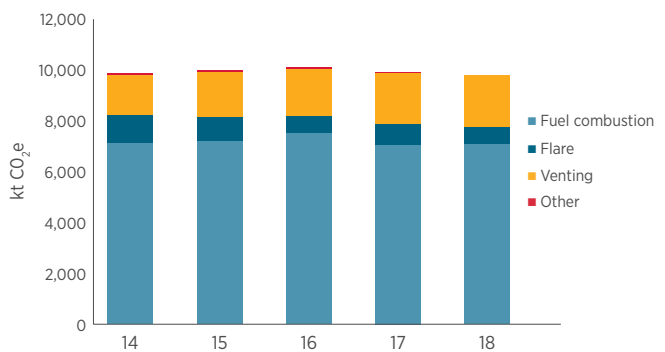
Since 2016, we have improved our energy efficiency by 3.4%<sup>1</sup> against baseline performance and we are on track to achieve our 2020 target of 5%.

We delivered a total of nine energy efficiency improvements across our operated asset portfolio in 2018, including:

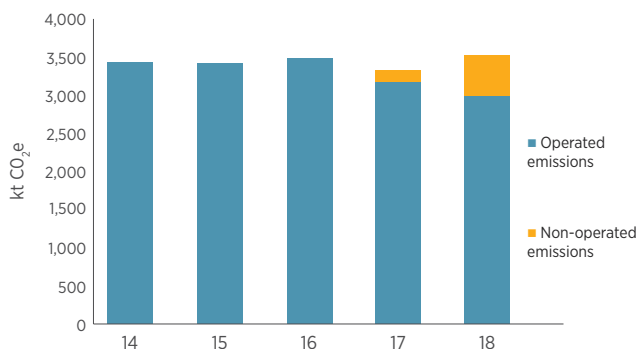
Increasing the operating pressure of the Pluto LNG processing train, to facilitate an increase in annual LNG production for no extra energy input

Turning off one compressor at KGP's domestic gas facilities when energy demand is low, saving more than 1,000 tonnes of fuel per month when applied.

### Scope 1 & 2 operated emissions by source



### Scope 1 equity emissions





We reduced flared gas by 16.3% from 2017 (operated basis), through high reliability at Pluto LNG and targeted maintenance at KGP.

We are also incorporating energy efficiency measures into our developments, including the planned installation of large-scale batteries for Pluto Train 2 Project, reducing the need for hydrocarbon-based back-up power generation and its associated emissions.

To support our growth projects, we established a dedicated team to manage and deliver our carbon offset portfolio.

**Managing physical climate change impacts**

We ensure our assets withstand any future physical impacts from climate change and we monitor and apply the latest research in this area. This was recognised by the 2018 Carbon Disclosure Project report that ranked Woodside as first (best) in regards to managing physical risk out of our peer group.

Refer to the 2018 Carbon Disclosure Project report for more information.

**Maintaining and growing a long-term resilient portfolio**

In testing the resilience of our portfolio, we consider sensitivities across a range of variables, including commodity prices, carbon prices, exchange rates and interest rates. The values of these sensitivities are based on several internal and external scenarios, including the International Energy Agency (IEA) sustainable development scenario, which aligns with the Paris Agreement ambition to hold global temperature rises below 2 degrees Celsius this century. Results of this testing showed that a continuous strong free cash flow is delivered under these scenarios.

We focus on keeping our cost of supplies low to help maintain the resilience of our portfolio. In 2018, our total unit production costs were US\$5.1/boe (US\$5.2/boe in 2017).

Technology is also a key enabler to maintain and grow a resilient portfolio. We have refreshed our technology strategy to ensure we continue to focus on conventional oil and gas technologies, whilst adding two new priorities: carbon management and the development of new energy sources.

Refer to the Innovation and technology pages 40–41 for more information on these priorities.

**Advocating for a competitive, lower carbon economy**

Our CEO has publicly advocated for a global carbon price as the best way to drive the transition to a lower carbon world.

In the absence of an appropriate carbon price, we risk a perverse outcome where the lowest cost of reliable supply into the market remains the greatest emitter of carbon, offsetting the benefits offered by renewables and low-carbon emitters.

We continue to promote this position and our broader support for a competitive, lower carbon economy in our engagements with relevant stakeholders. This also extends to participation in global events including the UN climate change conference, COP24, held in Poland in December 2018.

**Climate change publication**

In 2018, we developed a climate change publication, which aligns with our Climate Change Policy and climate change strategy. The document explains our energy future in a lower carbon world and how we deliver sustainable value by focusing on three themes: creating value, protecting value and contributing to the solution.

Refer to our website for the climate change document and more information.

WE DELIVER SUSTAINABLE VALUE

**CREATE VALUE**

Use our rigorous investment framework  
 Innovate to create opportunities  
 Create new markets

**PROTECT VALUE**

Withstand extreme environmental conditions  
 Test our existing portfolio  
 Maintain competitive cost of supply

**OUR CONTRIBUTION**

Reduce our net emissions intensity  
 Support policies that deliver lowest cost carbon abatement  
 Supply affordable and clean energy



# ENVIRONMENT

At Woodside, managing our environment is a key priority and we recognise that strong environmental performance underpins our success and continued growth.

## 2018 HIGHLIGHTS

- + Recognised 25 years of environmental collaboration with the Australian Institute of Marine Science (AIMS) and 20 years with the Western Australian Museum (WAM)
- + Obtained primary environmental approval for the Senegal development
- + Hosted four environmental capacity-building workshops in Myanmar

## 2019 PRIORITIES

- + Progress primary environmental approvals for Burrup Hub projects
- + Implement a biodiversity management plan for Senegal

### Our approach

Our environmental management process ensures we understand the potential risks and impacts of our activities and implement appropriate mitigation strategies to minimise our environmental footprint. Robust impact assessment and risk-management underpinned by credible science, strong partnerships and transparency are the key elements to Woodside's approach no matter where we are or what the regulatory regime may require.

Many of our activities in Western Australia are located next to unique environments. We collaborate with some of the world's leading scientific research organisations to understand how these environments function. These partnerships and credible science outcomes enable us to conduct our activities responsibly and verify our environmental performance. The knowledge generated through our partnerships is shared with government, industry and the broader community in many formats including scientific publications and educational outreach programs.

### Our environmental partnerships

Our partnerships with leading scientific organisations including WAM and AIMS provide a long-term knowledge base that underpins our environmental understanding and informs our approvals and impact assessments.

We work alongside biodiversity experts from WAM, and other leading global science organisations, to discover, identify and describe animal and plant species collected from Western Australia's north-west marine region. These findings form part of the Woodside Collection, one of the world's largest regional oceanic marine collections. The collection hosts over 55,000 specimens representing over 8,500 species of which 700 are new to science. This collection will be showcased in the Woodside Learning Gallery Down Under, which will open in the new Perth WAM in 2020.

The research published as a result of these long-term partnerships will help guide us as well as policy makers, natural resource managers and the public towards ensuring a more sustainable future for our oceans and communities.



### Waste management

We strive to find ways to reduce waste and improve resource efficiency, from design through to operating practices.

We set minimum performance requirements for the handling, storage and transport of waste and seek innovative solutions to reduce, reuse and recycle.

## ENVIRONMENTAL PARTNERSHIP OUTCOMES

# 18

STATE AND NATIONAL AWARDS

# 280+

SCIENTIFIC PUBLICATIONS

# 10

HIGHER DEGREES AND POST-DOCTORATES

# 150+

EDUCATIONAL OUTCOMES

## CASE STUDY

### A collaborative solution for mercury

Mercury is a naturally occurring element that is widespread in the environment. Almost all hydrocarbon reservoirs contain mercury. While mercury levels in hydrocarbons can vary greatly, even low levels of mercury need to be removed to avoid damage to gas processing facilities and to comply with environmental regulations. Mercury is removed from gas by passing it through a catalyst. Until recently, we disposed our mercury catalyst waste at a facility in Switzerland.

In 2015, we commenced collaboration with Contract Resources to develop a local mercury treatment facility. Woodside provided the foundation funding to underwrite the investment. The collaboration resulted in the construction of a A\$25 million mercury recovery facility in Karratha, which opened in mid-2018. The world-class plant is the largest hazardous waste recycling and processing facility in the southern hemisphere, capable of treating all of Australia's mercury-contaminated waste.

The world-class waste treatment facility provides secure storage, processing and purification of mercury waste from the liquefaction process at our facilities.

The construction of the mercury recovery facility in Karratha aligns with Australia's obligations under the Basel Convention to reduce the movements of hazardous waste between countries. It also reduces the likelihood of personal exposure through accident or mishap, eliminates long-term storage at the source and provides employment in the Pilbara.



Our CFO, Sherry Duhe, at the opening of Contract Resources' mercury waste treatment facility





# MAJOR INCIDENT RESPONSE

The ability to respond in the event of a major incident is a key focus of Woodside.

## 2018 HIGHLIGHTS

- + Successful major (operational) oil spill exercise spanning multiple locations and involving key stakeholders
- + Developed technology-based capability to support emergency response and improve H&S for responders
- + Deployed a standardised, fit-for-purpose incident management system

## 2019 PRIORITIES

- + Maintain high levels of preparedness and response capability
- + Collaborate with our industry partners on the Burrup to streamline emergency response

During 2018 Woodside has tested and confirmed its incident response capability by conducting:

# 401

EMERGENCY  
RESPONSE  
DRILLS

# 23

EMERGENCY  
MANAGEMENT  
EXERCISES

# 4

CRISIS  
MANAGEMENT  
EXERCISES

## Our approach

By carefully planning, reviewing and testing our major incident response capabilities, we ensure we meet our obligations to our stakeholders and, in particular, the communities where we are active.

Our global crisis and emergency management framework is based on international best-practice standards and uses an all-hazards approach of 'prevent, prepare, respond and recover' (PPRR).

## CASE STUDY

### Radar boosts safety

Woodside has committed to a joint industry initiative to install high-frequency radar on the North West Cape near Exmouth, Western Australia. This initiative will facilitate more accurate measurement of the direction of both waves and surface currents in the area, improving our oil-spill trajectory modelling and drift modelling in the region. Making this data publicly available will provide improvements in safety across the North West Cape, including supporting search and rescue operations.



A crisis exercise underway at Woodside's new Perth headquarters.





# OUR APPROACH

# OUR STAKEHOLDERS

Woodside applies a consistent approach to stakeholder engagement to understand and manage our impacts, protect our reputation, maintain our social licence to operate and to support the social and economic prosperity of the communities where we are active.

Our external stakeholder engagement procedure outlines our commitment to transparent communications and feedback with our stakeholder groups.

As part of compiling this report, we consulted representatives from each stakeholder group and identified topics of material concern as outlined on page 8.

The table below outlines how we engage with our eight stakeholder groups, their key interests and our responses to these.

STAKEHOLDER	HOW WE LISTEN	WHAT MATTERS	WHAT WE DO
<b>CUSTOMERS</b>	<ul style="list-style-type: none"> <li>+ Regular engagements to manage commercial and operational aspects of liquids delivery and annual plan for LNG delivery</li> <li>+ In-country representatives</li> <li>+ Proactive engagement to understand short- and long-term needs</li> </ul>	<ul style="list-style-type: none"> <li>+ Product quality</li> <li>+ Product cost</li> <li>+ Reliable, safe delivery</li> </ul>	<ul style="list-style-type: none"> <li>+ Reciprocal staff exchanges to promote understanding of respective businesses</li> <li>+ Site visits to build mutual understanding</li> </ul>
<b>JOINT VENTURE PARTICIPANTS</b>	<ul style="list-style-type: none"> <li>+ Regular meetings with joint venture boards and committees</li> <li>+ Assurance programs</li> <li>+ Regular operations overviews</li> <li>+ Participation in business reviews and audits</li> </ul>	<ul style="list-style-type: none"> <li>+ Reliability and safety of supply, product quality, cost and delivery</li> <li>+ Health and safety</li> <li>+ Climate change and greenhouse gas emissions</li> <li>+ Environmental impacts</li> <li>+ Governance and transparency</li> <li>+ Local content</li> </ul>	<ul style="list-style-type: none"> <li>+ Regular site visits</li> <li>+ Regular collaborative participation in government meetings and industry events</li> </ul>
<b>INVESTORS AND FINANCE PROVIDERS</b>	<ul style="list-style-type: none"> <li>+ Investor briefings</li> <li>+ Full-year and half-year results briefings</li> <li>+ Regular meetings with financiers, institutional shareholders and investor representatives</li> <li>+ Annual General Meeting</li> </ul>	<ul style="list-style-type: none"> <li>+ Superior shareholder returns</li> <li>+ Management of financial and non-financial risks</li> <li>+ High-quality corporate governance</li> <li>+ Climate change risk management</li> <li>+ Social and cultural impacts on communities</li> <li>+ Human rights</li> <li>+ Reserves replacement</li> </ul>	<ul style="list-style-type: none"> <li>+ Australian Securities Exchange announcements</li> <li>+ Environmental, social and governance briefings with Australian institutional investors</li> </ul>
<b>LOCAL AND INDIGENOUS COMMUNITIES</b>	<ul style="list-style-type: none"> <li>+ Regular community consultation and engagement</li> <li>+ Community offices</li> <li>+ Community grievance mechanism</li> <li>+ Regular social impact assessments (SIA) and management planning that involves community input</li> </ul>	<ul style="list-style-type: none"> <li>+ Social and cultural impacts on communities</li> <li>+ Local employment opportunities</li> <li>+ Cultural heritage management</li> <li>+ Local contracting opportunities</li> <li>+ Economic benefits</li> <li>+ Support to local businesses</li> </ul>	<ul style="list-style-type: none"> <li>+ Global Indigenous Peoples engagement strategy</li> <li>+ Community events and programs</li> <li>+ Community liaison groups and networks</li> <li>+ Local jobs portal</li> </ul>

STAKEHOLDER	HOW WE LISTEN	WHAT MATTERS	WHAT WE DO
<p><b>LOCAL, STATE AND NATIONAL GOVERNMENTS</b></p>	<ul style="list-style-type: none"> <li>+ Ongoing liaison with regulators, government agencies and a broad range of political stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>+ Responsible oil and gas resource development</li> <li>+ Environmental, cultural heritage, social and fiscal performance</li> <li>+ Local employment opportunities</li> <li>+ Regulatory compliance</li> <li>+ Fraud, anti-bribery and corruption</li> <li>+ Transparency</li> </ul>	<ul style="list-style-type: none"> <li>+ Direct submissions to state and national governments</li> <li>+ Contribute to domestic and international industry and business association submissions</li> </ul>
<p><b>SUPPLIERS AND CONTRACTORS</b></p>	<ul style="list-style-type: none"> <li>+ Regular reciprocal supplier performance reviews</li> <li>+ Embedded supplier relationship management with our Tier 1 suppliers</li> <li>+ Supplier feedback survey</li> </ul>	<ul style="list-style-type: none"> <li>+ Health and safety</li> <li>+ Social and cultural impacts on communities</li> <li>+ Supply opportunities</li> <li>+ Growth readiness</li> <li>+ Disruptive technology</li> </ul>	<ul style="list-style-type: none"> <li>+ Collaborative, outcome-focused drive for delivery of tangible local content and Indigenous engagement outcomes</li> <li>+ Continuous anti-bribery and corruption monitoring</li> <li>+ Collaborate to deliver tangible safety improvements</li> </ul>
<p><b>NON-GOVERNMENT ORGANISATIONS</b></p>	<ul style="list-style-type: none"> <li>+ Input into social and environmental impact assessments</li> <li>+ Regular participation in industry forums and associations</li> <li>+ Regular participation in the Voluntary Principles on Security and Human Rights events</li> </ul>	<ul style="list-style-type: none"> <li>+ Environmental impacts</li> <li>+ Climate change</li> <li>+ Social and cultural impacts on communities</li> <li>+ Cultural heritage impacts</li> <li>+ Fraud, anti-bribery and corruption</li> <li>+ Transparency</li> <li>+ Human rights</li> </ul>	<ul style="list-style-type: none"> <li>+ Participate in the Extractive Industries Transparency Initiative</li> <li>+ Engagement on growth projects</li> </ul>
<p><b>EMPLOYEES</b></p>	<ul style="list-style-type: none"> <li>+ Regular performance reviews and personal development plans for all employees</li> <li>+ Actively involve employees in our internal inclusion and diversity-focused community groups</li> <li>+ Woodside Week in-house conference held to promote collaboration and innovation</li> </ul>	<ul style="list-style-type: none"> <li>+ Values-led organisational culture</li> <li>+ Health and safety</li> <li>+ Career development opportunities</li> <li>+ Inclusion and diversity</li> <li>+ Major incident prevention and response</li> <li>+ Climate change</li> <li>+ Environmental impacts</li> </ul>	<ul style="list-style-type: none"> <li>+ Our Compass values</li> <li>+ Ongoing communication and programs for employee safety, health and wellbeing</li> <li>+ Annual staff briefing with the CEO and senior executives</li> <li>+ Annual Woodside Awards, recognising outstanding employee achievement and contribution</li> <li>+ Annual event to recognise 20+ years of service</li> </ul>



MATERIAL TOPIC

# FRAUD, ANTI-BRIBERY AND CORRUPTION



Woodside has a zero-tolerance approach to fraud, bribery and corruption.

## 2018 HIGHLIGHTS

- + No violations of anti-bribery and corruption laws were detected within or in connection with Woodside
- + Conducted eight anti-bribery and corruption audits
- + 100% of our people completed anti-bribery and corruption training as part of the Code of Conduct
- + 54% of our people completed advanced anti-bribery and corruption training for higher-risk roles
- + Conducted anti-bribery and corruption workshops with joint venture participants in higher-risk locations

## Our approach

Bribery and corruption undermine fair competition, erode public trust in governments and businesses and disadvantage economies. Bribery and corruption divert funds into the hands of criminals and dishonest officials.

Our standard contracting terms and conditions comply with Australian and international anti-bribery and corruption laws and address specific obligations in relation to our policies.

When entering non-operated joint venture agreements, Woodside expects compliance with anti-bribery and corruption obligations by the operator and other participants in the joint venture and requires such obligations within agreements.

Woodside reviewed its anti-bribery and corruption processes in 2018 and made the following improvements:

- + Cross-functional coordination on data analytics for the detection of potential fraud and other misconduct through working groups
- + Updated our due-diligence processes to test and strengthen existing controls for teams undertaking activities attracting a higher level of fraud risks.

Woodside also conducted eight anti-bribery and corruption compliance audits on contractors and joint venture participants resulting in recommended improvements to staff training, due-diligence and our policy.

## Managing the risk

We assess fraud and corruption risk across all our activities and locations using criteria including country of operation, activities undertaken and the level and nature of engagement with government. During the year, a number of actions were implemented under stand-alone risk assessments for our Senegal and Myanmar assets, including training, localised controls over finance and the engagement of contractors.

We delivered an updated e-learning corruption training to 2,092 managers and personnel, representing 54% of the company. Senior management and all personnel in international locations were required to complete the training. In addition, personnel travelling to high-risk locations received face-to-face briefings on bribery and corruption risks.

Our fraud and corruption global risk is reviewed at least twice yearly.

OPPORTUNITIES	RISKS
+ Maintain our position as a partner of choice	+ Contracting and procurement fraud
+ Continue to enhance internal controls and risk management	+ Bribing of government officials and/or private individuals
+ Influence business partners to meet industry standards	+ Theft of confidential information



# SUPPLY CHAIN AND LOCAL CONTENT

To support Woodside’s growth strategy, we continue to foster sustainable supply chains, delivering value while enhancing positive outcomes for stakeholders and the communities where we are active.

## 2018 HIGHLIGHTS

- + Achieved significant increases in the number of new Indigenous engagements with 75 new commercial contracts awarded – resulting in a 74% increase in spend
- + Implemented the supply-chain human rights framework
- + Increased the use of data analytics and system automation to reduce financial, bribery and corruption, and modern slavery risks
- + Delivered targeted training for company representatives, management and administration personnel

## 2019 PRIORITIES

- + Work with project contractors to establish local and Indigenous opportunities in the growth phase that will continue into the production phase
- + Develop a revised digital structure to increase efficiency in contracting processes

By positively influencing the health, safety, environmental and social performance of our suppliers, we can improve compliance, reduce risk and enhance positive outcomes for our host communities.

A total of A\$5.0<sup>1</sup> billion was spent across 2,476 suppliers in 2018, with the majority of spend being with Australian-based suppliers.

We have processes in place to maintain the quality of our supply chain and identify and manage risks using appropriate controls and performance measures. We undertook a number of continuous improvement initiatives to better support our base business and growth strategy. These included the introduction of automated reporting to improve visibility of spend against contracts and augment contract management and fraud analytics.

We also introduced training to enhance the commercial acumen and contract management skills for company representatives, achieving a 99% completion rate. A pilot training module for administration assistants was also developed to increase purchase requisition compliance with face-to-face training delivered across all operating facilities.

To better understand and manage modern slavery risks in our supply chain, we implemented the supply chain human rights framework.

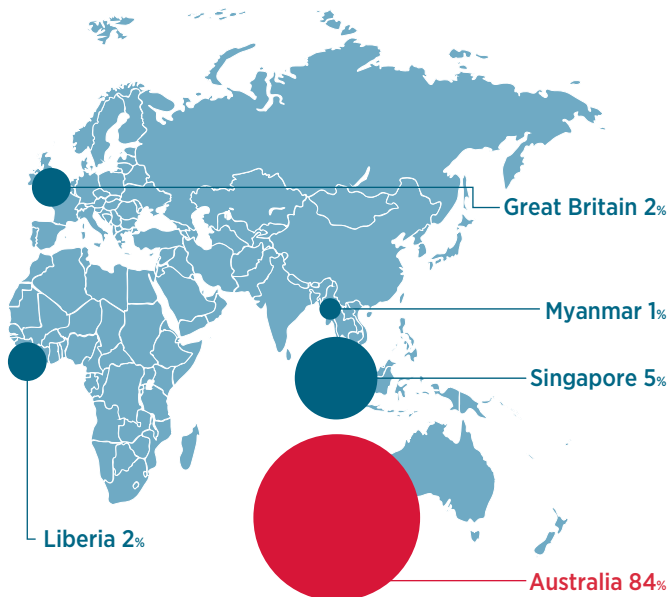
[i](#) Refer to Human rights on page 24 for more information.

During the year, we achieved the following positive outcomes against our Elevate RAP procurement commitments:

- + 147 active purchasing relationships with Indigenous businesses
- + 27% increase in Indigenous employment with our contractors.

1. Figure is converted from US dollars as of 31 December 2018.

## GLOBAL SPEND BY COUNTRY



Graphic not to scale

# TRANSPARENCY

Complying with laws, regulations and stakeholder expectations in relation to financial payments is vital to maintaining Woodside’s licence to operate, and is required for all of our business activities.

## Our approach to tax

Woodside recognises the importance of stability, sustainability and competitiveness in tax and fiscal regimes to underpin investment decisions and enable project development.

Our tax governance framework and Board-approved Tax Policy is clear – we will comply with all tax laws and regulations applicable to our business.

We believe in paying taxes according to where value is created and do not support the use of artificial arrangements. Woodside is committed to maintaining open and constructive relationships with our tax administrators.

We voluntarily operate under an Annual Compliance Arrangement (ACA) with the Australian Taxation Office (ATO), which provides a framework for real-time disclosure and interaction on tax matters. The ACA is only available to taxpayers that have a trusting relationship with the ATO, are willingly transparent, have a good compliance history and a robust tax governance framework.

We recognise the interests of our stakeholders in transparency and commend tax transparency initiatives that increase public confidence in the contributions and compliance of corporate taxpayers. In Australia, we voluntarily participate in the Board of Taxation’s Tax Transparency Code, addressing the recommended disclosures in two parts: Part A in our Annual Report and Part B in this report.

☛ Refer to the Tax Transparency section of our website for more information on our approach and government submissions and reports.

## Our tax contribution

Woodside acknowledges paying the taxes due under law is one of the ways we support our social licence to operate.

More than 95% of the taxes we have paid are Australian taxes, as this is where the majority of our income is earned and our operating assets are located.

Hydrocarbon production in Australia is subject to a complex mix of taxes including corporate income tax, petroleum resource rent tax (PRRT) and federal royalties and excise. The amount of taxes we pay is affected by a number of factors, including production and commodity prices impacting revenues, and the amount of capital and operating expenditure.

In 2018, Woodside paid A\$894 million in tax and royalties to the federal and state governments of Australia and A\$4.9 billion over the past five years.

Australian Tax Contribution	2018 (A\$m)	2017 (A\$m)
Income Tax	555	537
PRRT	(3)	(8)
Federal royalties	217	153
Federal excise	62	59
Payroll tax	58	53
Fringe benefits tax	5	3
<b>Total</b>	<b>894</b>	<b>797</b>

Our effective income tax rate in respect of both our global and Australian operations is near to the Australian corporate tax rate of 30% as outlined in our Annual Report 2018.

☛ Refer to the Tax Transparency section of our website for more information on our contribution.

WE REMAIN A SIGNIFICANT AUSTRALIAN TAXPAYER WITH MORE THAN

**95%**

OF OUR TAXES PAID IN AUSTRALIA

IN 2018, WE PAID

**A\$ 894**

MILLION IN TAXES AND ROYALTIES IN AUSTRALIA



**International related-party dealings**

Woodside has an expanding global portfolio, with business operations in various places around the world. We apply arm’s-length principles to our international related-party dealings (IRPDs), the total value of which is not significant when compared to revenue from production activities.

The majority of our IRPDs are support services provided from Australia, where the majority of our staff and our corporate headquarters are located.

Services are also provided from Woodside’s office in Singapore, which enables participation in LNG trading markets and sourcing of new buyers for our uncommitted Australian LNG cargoes. The profits from these cargoes are subject to tax in Australia.

Other support functions, including representative offices and group services, are located across the globe in proximity to important assets and markets.

Refer to Annual Report 2018 for a full list of Woodside’s Group of Companies, their country of incorporation and our ownership interest.

**Extractive Industries Transparency Initiative**

The Extractive Industries Transparency Initiative (EITI) is a global standard to promote the open and accountable management of extractive resources. Woodside joined the EITI in 2005 and became an EITI Supporting Company in 2008. Woodside is committed to reporting our petroleum tax and fee payments in respect of operations in implementing countries where we have an interest.

**Australian industry associations and memberships**



**Political donations and forum memberships**

Woodside regularly engages with governments of countries where we are active to exchange information and views essential to mutually informed decision-making.

In 2018, Woodside renewed its membership to the Federal Liberal Party Australian Business Network and the Australian Labor Party Federal Business Forum, with Board approval. These represent the two major political party business forums in Australia.

Woodside’s political contributions for the financial year 2017/18, as published by the Australian Electoral Commission, totalled A\$237,300. This comprised A\$110,000 each for membership of Liberal and Labor business associations and A\$17,300 for participation in other state and federal political conferences and events.

Woodside does not donate to campaign funds for any political party, politician or candidate for public office in any country.

**Industry association memberships**

Woodside is a member of a variety of industry associations through which we advocate for sound decision-making on a range of topics important to our company and our stakeholders.

While Woodside’s views do not always align with these associations, they facilitate important collaboration and information-sharing opportunities for our industry and the wider business community.

Refer to our website for more information on memberships.

**International industry associations and memberships**



# REGULATORY COMPLIANCE

Woodside must operate an effective management framework to maintain our licence to operate, comply with regulatory requirements and meet the expectations of joint venture participants and stakeholders.

## 2018 HIGHLIGHTS

- + No violations of anti-competitive practice laws
- + No significant fines or sanctions received

## 2019 PRIORITIES

- + Support timely regulatory approvals for our growth projects
- + Leverage our management system to increase internal visibility of our compliance performance



## Our approach

The rights and interests held by Woodside and its stakeholders are secured through the laws of the countries where we work. We respect our stakeholders' rights and interests, and protect our own rights and interests, by complying with the law.

In undertaking our global business activities, we comply with a broad range of regulatory obligations both in Australia and internationally.

We maintain oversight of regulatory compliance across all parts of our business to ensure:

- + Regulatory obligations are identified, understood and assessed for applicability in the specific circumstances
- + Responsibilities to comply with regulatory obligations have been identified and clearly communicated
- + Woodside personnel have the knowledge and capability to effectively meet regulatory obligations
- + Regulatory obligations are being met and reported against
- + Where regulatory obligations are not met, or not likely to be met, corrective actions are being taken.

Our management system sets global minimum expectations for the way we work, supported by more detailed internal processes and controls designed to achieve our business objectives while managing risk and meeting our regulatory obligations.

In 2019, we will implement improvements in assessing the effectiveness of our management system. This is important for compliance with objectives-based regulatory regimes, which set high-level requirements that must be achieved, but do not prescribe how those requirements must be met.

## Our 2018 performance

There were no violations of anti-competitive practice laws detected within or in connection with Woodside.

No significant monetary or non-monetary sanctions or fines were received.

Three regulatory infringement notices were received in relation to our activities.

We met 2,069 regulatory compliance deadlines across 51 facilities/projects and 66 corporate entities in 19 countries.





**OUR FUTURE**

# INNOVATION AND TECHNOLOGY

Our innovation and technology work streams and partnerships improve our business, as well as help solve large and complex challenges in our industry. As part of our work, we invest in knowledge, passion and capability across science, technology, engineering and mathematics (STEM) disciplines.

## Our approach

At Woodside, we start with the opportunity or problem. Then, we think big, prototype small and scale fast.

We invest in technology to reduce costs for our existing operations, to enable future developments, and to extend sources of revenue. The application of technology in our business also enables our people to work more efficiently and assists in reducing their exposure to health and safety hazards.

We have updated our technology strategy to increase the priority of carbon management and the development of new energy markets and sources. We continue to focus on conventional oil and gas technologies and data-driven breakthroughs. Our strategy ensures we apply innovation and technology to support growth.

Collaborative partnerships are an essential part of our approach. Ideas and solutions go further when we encourage innovative thinking from our own people, combined with fresh perspectives from outside our industry.

## Supporting our near-term growth

Woodside has long been a leader in applying oil and gas technologies. Supported by our capabilities in data science, analytics and machine learning, we continue to search for breakthroughs that will deliver value.

We began an Australian-first application of Humidur anti-corrosion paint to oil and gas infrastructure. Long-lasting Humidur requires only one coat, with minimal surface preparation – delivering substantial time and cost savings. We also delivered a 1.5% improvement in energy efficiency across Trains 1–2 at KGP by optimising the composition of mixed refrigerants to match the varying ambient temperature rather than the long-term average.

Our in-house sensor team successfully trialed a visual digital inspection at one of our assets, which showed feasibility at scale. Digital inspections would reduce the safety risk exposure of our people on site, and enable them to focus on other value-adding activities.

The robotics team continued exchanging people and knowledge through our collaborative partnership with NASA, and conducted proof of concept trials at KGP and Pluto LNG onshore gas plants. In October, we carried out an Australian-first robotics trial on an offshore platform, at the North Rankin Complex. This is an early step towards proving our extended capabilities in remote operations.

We worked with ABB Australia Pty Ltd to install a 1 MWh powerstore battery on the Goodwyn A (GWA) platform, with commissioning due to start in 2019.

This world-first application of microgrid technology on an offshore platform is expected to reduce GWA's use of fuel gas by more than 2,000 tonnes per year, delivering an estimated 5% improvement in energy efficiency, and a 10,000 tonne annual reduction in CO<sub>2</sub>e emissions.

## New opportunities and horizons

We are supporting the transition to lower carbon energy in a way that adds value for our shareholders across our growth horizons.

As part of our work developing and promoting new markets for LNG fuels, we are targeting start-up of a truck-loading facility at our Pluto LNG plant in early 2019. This facility will supply trucked LNG to help displace diesel in fuel-intensive mining operations in the remote Pilbara region. We also continue to work with our partners on the Green Corridor initiative between the Pilbara and North Asia, which aims to increase the use of LNG as a marine fuel on this significant export route.

In addition to our ongoing work to reduce CO<sub>2</sub> emissions from current activities, we are taking a proactive approach to manage future emissions.

In late 2018, we established a dedicated, multidisciplinary team to build a portfolio of CO<sub>2</sub> offset mechanisms considering reduction, sequestration and other uses of carbon. We also progressed plans to integrate industrial-scale solar power generation with gas-fired generation and battery storage for our future Burrup Hub LNG operations. Reducing fuel gas consumption on the Burrup Peninsula will increase the amount of gas available for LNG production, yielding both environmental and commercial benefits.

In the longer term, we are exploring opportunities to commercially produce and export hydrogen.



## Cybersecurity

Our developments in hardware have been complemented by progress in cognitive computing work, as well as our ongoing focus on managing cybersecurity risks through control frameworks and system improvements. Our in-house cognitive assistant, Willow, works across systems to surface information in response to queries, increasing efficiency and keeping our people connected to more than 60 years' knowledge and experience.

## Supporting innovation and STEM in the community

During 2018, we invested more than A\$3 million in research partnerships with universities, recognition for scientists and innovators, and in STEM facilities and outreach programs aimed at young people and families.

Our award-winning STEM in Schools Program, delivered together with Earth Sciences Western Australia, reached a significant milestone during the year with more than 10,000 students engaged since the program began.

## CASE STUDY

### Using FutureLab to think big, prototype small, and scale fast

The Woodside FutureLab connects Woodside with universities, research institutions, start-ups, individual entrepreneurs and adjacent leading industries.

In March 2018, we ran a FutureLab Grand Challenge on ways to rapidly weld large-diameter pipelines, which would directly support Woodside's Burrup Hub growth plans.

Currently, installation costs make up the majority of pipeline expenditure. We see potential to reduce installation time and per-kilometre costs significantly, through applying technologies from fields like autonomous systems and next-generation welding.

The Grand Challenge was launched at The Welding Institute in Cambridge, England. Fifty technical experts from around the world, representing every part of the pipeline value chain, worked on the problem of how to weld 42" pipe reliably, in a single pass, within a two-minute cycle.

Following the Grand Challenge, we are now working collaboratively with participants on further testing of electron beam welding, where a beam of electrons moving at high speed is applied to two materials to be joined.

Our work on pipeline welding will be further enhanced by another FutureLab initiative - the Centre for Long Subsea Tiebacks. We launched the Centre in partnership with the University of Western Australia and Chevron, to drive research into new subsea engineering technologies for offshore oil and gas production.



Our Chief Technology Officer, Shaun Gregory, at the opening of the Centre for Long Subsea Tiebacks.

# FUTURE ENERGY MIX

The global energy mix has never been static. Today, change is being hastened by a push for more sustainable and lower carbon sources of energy. As global energy demand continues to grow, governments, communities, companies and individuals are seeking ways to supply energy to a growing population, more efficiently, and with a lower carbon footprint.

The number of people with access to electricity is increasing rapidly. To meet demand, the IEA New Policy Scenario (NPS) requires the world to generate 57% more electricity by 2040. In its 2018 World Energy Outlook, the IEA identifies several long-term trends important to the continued electrification of energy supply:

- + Electricity and economic prosperity**  
Access to electricity in developing countries helps open paths to economic prosperity and wellbeing.
- + Electricity capacity vs energy security**  
Power systems need adequate capacity to meet demand, but also sufficient flexibility to cope with the intermittency of renewables to ensure security of supply.
- + Electrification and the environment**  
Efforts to electrify can conflict with environmental goals. Significant effort will be required to reduce the carbon footprint of the power sector, improve energy efficiency and encourage the uptake of lower carbon technologies across all sectors.

## Natural gas in the mix

Under the IEA NPS, natural gas is the fastest growing fossil fuel and is ideal to partner with renewables to decarbonise the global energy system. The IEA NPS indicates that from 2017 to 2040 total gas demand will increase by 43%.

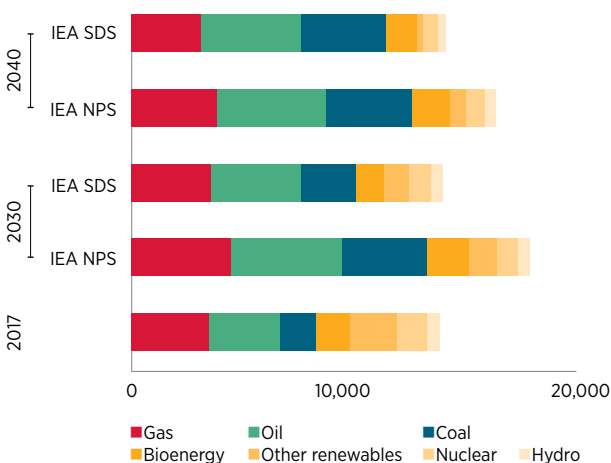
Gas demand growth in developing nations across Asia-Pacific and Africa is projected to outstrip all other regions, largely a result of China’s “blue-sky” initiative. Markets in the developed nations of North America and Europe will still make up more than 30% of gas demand in 2040 under the NPS.

In power generation, the IEA NPS projects demand growth of 31% by 2040. Gas in transport nearly triples to 2040 due to the introduction of compressed natural gas/LNG-fuelled vehicles and LNG-powered ships to meet International Maritime Organisation regulations resulting in the reduction of harmful emissions associated with the use of diesel and high-sulfur marine oil.

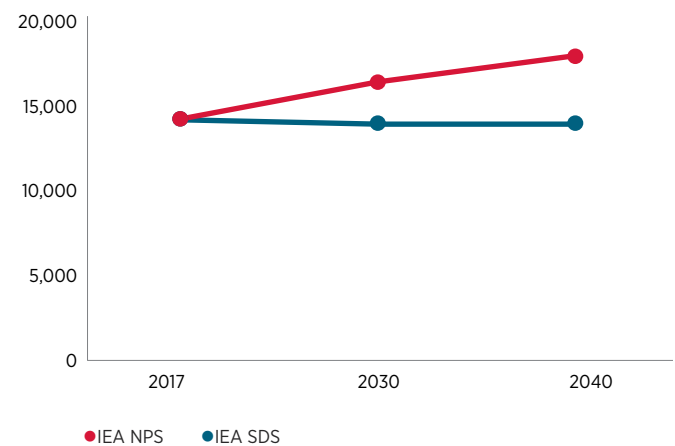
In the end-use sectors of industry and buildings, the IEA NPS projects an increase in gas consumption of 65% and 26% respectively to 2040. Key drivers of growth in the industrial sector include the chemical industry’s use of gas to produce heat and steam and as a feedstock to produce fertilisers and methanol.

➔ Refer to the Annual Report 2018 for more information on the dynamics of the LNG market.

Primary energy demand by fuel (Mtoe)



Total primary energy demand (Mtoe)



Source: IEA World Energy Outlook 2018

IEA = International Energy Agency

NPS = New Policies Scenario

SDS = Sustainable Development Scenario







# Notes and definitions

## Health and safety

Frequency rates	Frequency rates are calculated per million hours worked.
Total recordable injury rate (TRIR)	The number of recordable injuries (fatalities + lost work day cases + restricted workday cases + medical treatment cases + permanent partial disability) per 1,000,000 hours worked.
Lost time injury (LTI)	An LTI is an incident that results in a fatality, disability or time lost from work. The number of LTIs is the sum of these incidents.
Incident	Is one, or more, of the following: an unplanned release of energy that actually resulted in injury, occupational illness, environmental harm or damage to assets, a near miss, damage or potential damage to company reputation, breach of regulatory compliance and/or legislation, security breach.
Loss of Primary Containment (LoPC)	An unplanned or uncontrolled release of any material from primary containment, including non-toxic and non-flammable materials (e.g. steam, hot condensate, nitrogen, compressed CO <sub>2</sub> or compressed air).
Process safety event (PSE) (Tier 1 and Tier 2)	An unplanned or uncontrolled loss of primary containment (LoPC) of any material including non-toxic and non-flammable materials from a process, or an undesired event or condition. Process safety events are classified as Tier 1 – LoPC of greatest consequence or Tier 2 – LoPC of lesser consequence. As defined by American Petroleum Institute (API) recommended practice 754.

## People

Total employees	Total number of employees including permanent, fixed term and part-time. Does not include secondees or contractors.
Contractors	Non-Woodside employees, working within Woodside to support specific activities.
Total turnover	Permanent and fixed-term employees who left Woodside voluntarily or involuntarily.
Voluntary turnover	Permanent and fixed-term employees who left Woodside voluntarily for reasons not initiated by the company.
Social investment	Social investment data has been verified by the London Benchmarking Group (LBG) methodology. The LBG verified data includes donations, community investment and commercial initiatives. For more information visit <a href="http://lbg-australia.com">lbg-australia.com</a> .

# Glossary

## Terms

AIMS	Australian Institute of Marine Science
ASX	Australian Securities Exchange
ATO	Australian Taxation Office
Board	Woodside's governing body - the Board of Directors
CEO	Chief Executive Officer
Code	Woodside's Code of Conduct
EITI	Extractive Industries Transparency Initiative
ESIA	Environmental and Social Impact Assessment
Flaring	The controlled burning of gas found in oil and gas reservoirs
GEM	Gender Equality Matters
Greenhouse gases	Gases that trap heat in the atmosphere, including carbon dioxide, hydrofluorocarbons, methane, nitrous oxides, ozone, perfluorocarbons, vapour and water
GRI	The Global Reporting Initiative is a network-based organisation that promotes sustainability reporting worldwide. The GRI reporting framework sets out principles and indicators that organisations can use to measure and report their economic, environmental and social performance.
HAZOP	Hazard and operability study
HSE	Health, safety and environment
IPIECA	International Petroleum Industry Environmental Conservation Association. The global oil and gas industry association for environmental and social issues.
KLE	Karratha Life Extension
LBG	London Benchmarking Group
LNG	Liquefied natural gas

LOPA	Layers of protection analysis
LTIF	Lost time injury frequency
NWS	North West Shelf
PRRT	Petroleum Resource Rent Tax
PSE	Process safety event
RAP	Reconciliation Action Plan
Renewable energy	Any form of energy from biological, geophysical or solar sources that replenishes itself by natural processes at a rate that is equal to or greater than its rate of use
SDG	Sustainable Development Goals
STEM	Science technology engineering and mathematics
Sustainability	Achieving a decent standard of living for everyone today without compromising the needs of future generations. (United Nations, 2013)
TCFD	Taskforce on Climate-related Financial Disclosures
TRIR	Total recordable injury rate
Upstream	Industry term for operations relating to exploring for, developing and producing as well as marketing crude oil and natural gas. This includes transporting crude oil, natural gas and petroleum products by pipeline or marine vessel.
VPSHR	Voluntary principles on security and human rights
WAM	Western Australian Museum
WMS	Woodside Management System. This is the company's structured governance framework.
WRC	Woodside Reconciliation Community

## Units

A\$	Australian dollars
bn	billion
boe	barrel of oil equivalent
CO <sub>2</sub> e	carbon dioxide equivalent
kt	kilotonne
t	tonne
tCO <sub>2</sub> e	tonnes of carbon dioxide equivalent
US\$	US dollars



## **Sustainable Development Report 2018**

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