

2019

# Boral Review

INCORPORATING BORAL'S  
2019 SUSTAINABILITY REPORT



Working together to  
*build something great*



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## ABOUT THIS REPORT

The Boral Review provides a summary of the Company's performance on material sustainability issues and financial results for the year ended 30 June 2019.

Boral Limited's statutory results are reported under International Financial Reporting Standards (IFRS). Earnings before significant items is a non-IFRS measure reported to provide a greater understanding of the underlying business performance of the Group. Significant items are detailed in note 2.6 of the financial statements and relate to amounts of income and expense that are associated with significant business restructuring, business disposals, impairment or individual transactions.

The Boral Review has not been subject to audit; however, it contains disclosures that are extracted or derived from the financial statements for the year ended 30 June 2019. All dollar amounts referred to are in Australian dollars unless otherwise specified.

A glossary of key terms used in the report is on page 53.

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BORAL LIMITED  
ABN 13 008 421 761

Boral delivered a solid result in FY2019 with benefits from cost reductions and improvement initiatives, and continued strong infrastructure activities, helping to offset impacts of residential market declines.

In FY2019, we delivered an underlying profit after tax of \$440 million, down 7% on the prior year. Headwaters acquisition synergies of US\$32 million were slightly ahead of plan, and our year-four synergy target of US\$115 million remains on track.

Boral's strategy to deliver improved performance and sustainable growth for all our stakeholders is progressing well.

## YEAR AT A GLANCE

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### 2 JULY 2018

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The sale of Boral's Denver Construction Materials business for US\$127 million closed.

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### 29 AUGUST 2018

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Boral reported a 47% increase in net profit after tax<sup>1</sup> to \$514 million for the year ended 30 June 2018, compared to the prior year.

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### 17 OCTOBER 2018

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Boral agreed to sell its US Block business for US\$156 million. The transaction closed on 30 November 2018.

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### 30 OCTOBER 2018

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At the Annual General Meeting, Peter Alexander and John Marlay were re-elected as Directors. The resolution to adopt the Remuneration Report was well supported with 91.3% of shareholder votes cast in favour.

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### 4 FEBRUARY 2019

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Boral provided a trading update and revised FY2019 guidance.

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### 25 FEBRUARY 2019

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Boral reported a 6% decrease in net profit after tax<sup>1</sup> to \$224 million for the six months ended 31 December 2018, compared to the first half last year.

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### 21 JUNE 2019

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Boral entered into a property development management deed with Mirvac in relation to the company's Scoresby site in Victoria. Mirvac will manage the urban development of the 171-hectare site over a multi-decade period. Boral expects Scoresby to deliver in excess of \$300 million over the life of the project subject to rezoning and market conditions.

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### 23 AUGUST 2019

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Boral agreed to sell its Midland Brick business for \$86 million<sup>2</sup> in line with strategy.

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### 26 AUGUST 2019

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Boral entered into an agreement with Knauf to form an expanded 50:50 plasterboard joint venture in Asia and for Boral to return to 100% ownership of USG Boral Australia and New Zealand.

1. Before acquired amortisation and significant items.  
2. Boral's net proceeds are expected to be around \$82 million, following adjustments to working capital and other completion adjustments, which is broadly in line with book value.

# Who we are

## OUR PURPOSE

At Boral, we help our customers *build something great* by supplying them with high-quality, sustainable building products and construction materials.

## OUR GOALS

In operating our three divisions, our **key strategic objective is to deliver shareholder returns that exceed the cost of capital through the cycle**, while creating value for our customers, employees, suppliers and the communities in which we operate. We strive to create value for our stakeholders by:

- driving safety outcomes towards world's best practice based on Zero Harm Today
- investing in our people to enable them to deliver their best
- minimising our environmental footprint and building our resilience to climate-related impacts

- delivering superior performing, innovative and sustainable products and solutions for our customers, and
- operating ethically and making a positive contribution to our local communities.

Our strategy to harness sustainable growth has seen Boral invest in less energy-intensive, lighter weight, more innovative products and reduce exposure to lower growth, energy-intensive, higher cost operations.



**CURRENT STRATEGIC PRIORITIES**

**In Boral Australia, maximise returns and maintain leading positions**

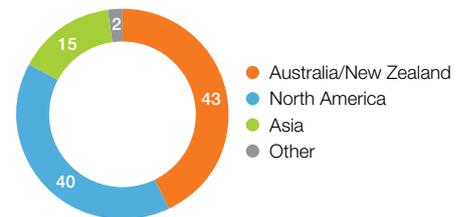
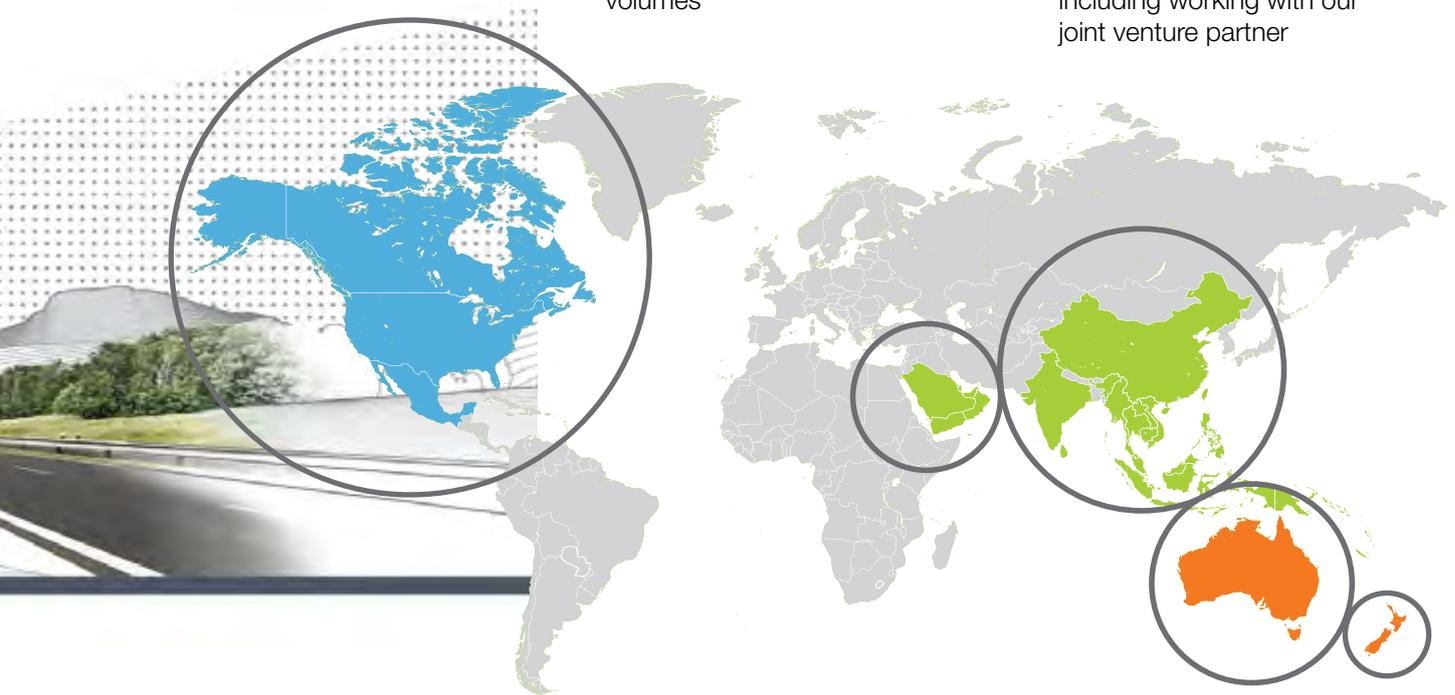
- Profitably supply multi-year growth in major roads and infrastructure
- Harness our leading position in Australia, including delivering benefits from quarry, cement and plant network reinvestments
- Maintain strong returns and margins through customer, commercial and operational excellence programs

**In Boral North America, continue the transformation by delivering targeted synergy benefits and growth**

- Drive improved returns on funds employed (ROFE)
- Leverage growth from the Headwaters acquisition, including progressing delivery of our year-four synergy target of US\$115 million
- Grow through market recovery and innovation, and by delivering our fly ash strategy to increase volumes

**In USG Boral, deliver long-term growth and value from strategic opportunities**

- Continue to grow our business through product penetration and innovation including next generation Sheetrock®
- Respond to changes in cyclical demand and competitive pressures through business improvement initiatives and capacity planning
- Create value through strategic growth opportunities, including working with our joint venture partner



EMPLOYEES BY LOCATION (%)

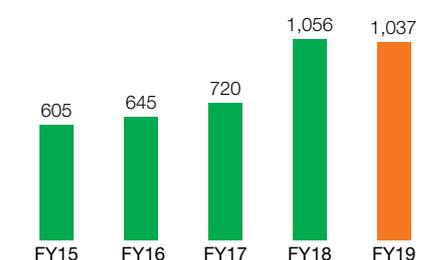
# Results at a glance

## OUR RESULTS

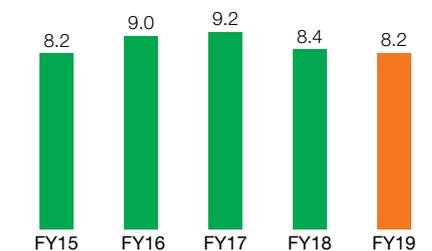
Year ended 30 June (A\$ million unless stated)	FY2019	FY2018
Revenue – total operations basis	5,863	5,869
– continuing operations basis	<b>5,801</b>	<b>5,579</b>
EBITDA <sup>1</sup> – total operations basis	1,037	1,056
– continuing operations basis	<b>1,033</b>	<b>1,015</b>
EBITA <sup>1</sup>	721	749
<b>EBIT<sup>1</sup></b>	<b>660</b>	<b>688</b>
Net interest <sup>1</sup>	(103)	(104)
Profit before tax <sup>1</sup>	557	585
Tax <sup>1</sup>	(116)	(111)
<b>Net profit after tax<sup>1</sup></b>	<b>440</b>	<b>473</b>
Net significant items	(168)	(32)
<b>Statutory net profit after tax</b>	<b>272</b>	<b>441</b>
<b>Net profit after tax and before amortisation<sup>1</sup></b>	<b>486</b>	<b>514</b>
Cash flow from operating activities	762	578
Gross assets	9,544	9,510
Funds employed	8,052	8,183
Liabilities	3,685	3,780
Net debt	2,193	2,453
Stay-in-business capital expenditure	340	375
Growth capital expenditure	113	51
Acquisition capital expenditure	11	–
Depreciation and amortisation	378	368
Boral employees	11,916	11,898
Total employees including in joint ventures	17,104	17,131
Revenue per Boral employee, \$ million	0.492	0.493
Net tangible asset backing, \$ per share	2.12	1.99
EBITDA margin on revenue <sup>1</sup> , %	17.7	18.0
EBIT margin on revenue <sup>1</sup> , %	11.3	11.7
EBIT return on funds employed <sup>2</sup> , %	8.2	8.4
EBIT return on average funds employed <sup>3</sup> , %	8.1	8.6
Return on equity <sup>1</sup> , %	7.5	8.3
Gearing		
Net debt/equity, %	37	43
Net debt/net debt + equity, %	27	30
Interest cover <sup>1</sup> , times	6.4	6.6
Earnings per share <sup>1</sup> , ¢	37.5	40.4
Dividend per share, ¢	26.5	26.5
Employee safety <sup>4</sup> : (per million hours worked)		
Lost time injury frequency rate	1.3	1.6
Recordable injury frequency rate	7.5	8.7

Figures may not add due to rounding.

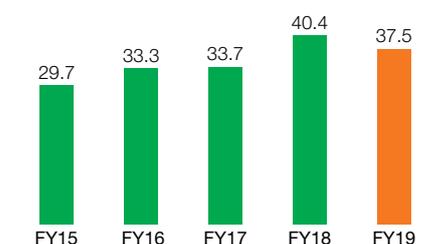
## FINANCIAL HIGHLIGHTS



EBITDA (A\$m)<sup>1</sup>



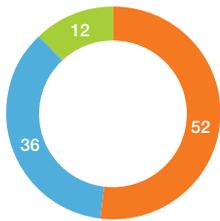
RETURN ON FUNDS EMPLOYED (%)<sup>1,2</sup>



EARNINGS PER SHARE (¢)<sup>1,5</sup>

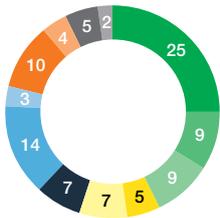


DIVIDENDS PER SHARE (¢)



REVENUE BY DIVISION (%)<sup>6</sup>

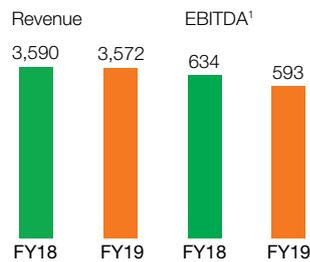
- Boral Australia
- Boral North America
- USG Boral



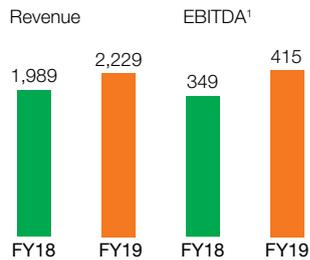
REVENUE BY MARKET (%)<sup>6</sup>

- Australian roads, highways, subdivisions & bridges, and other engineering
- Australian non-residential
- Australian detached dwellings
- Australian multi-dwellings
- Australian alterations and additions
- Asia and Middle East
- USA single-family residential
- USA multi-family residential
- USA repair and remodel
- USA non-residential
- USA infrastructure
- Other

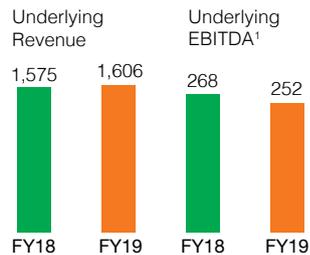
### THREE FOCUSED OPERATING DIVISIONS



BORAL AUSTRALIA (A\$m)

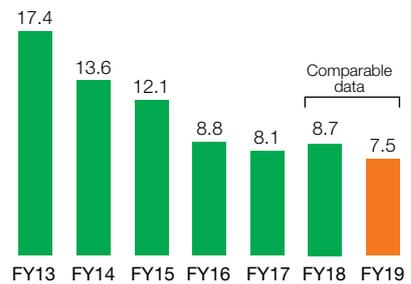


BORAL NORTH AMERICA (A\$m)

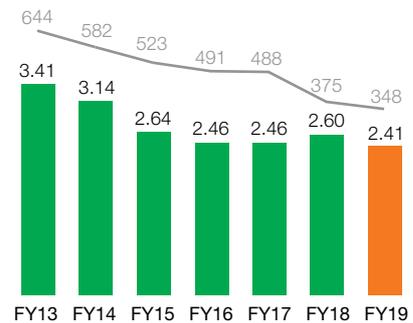


USG BORAL (A\$m)

### HEALTH, SAFETY AND ENVIRONMENT



RECORDABLE INJURY FREQUENCY RATE (RIFR)<sup>7,8</sup> (per million hours worked)



GREENHOUSE GAS EMISSIONS (GHG)<sup>9</sup>

- GHG emissions (million tonnes carbon dioxide equivalent (CO<sub>2</sub>-e))
- GHG emissions intensity (tonnes CO<sub>2</sub>-e per A\$m revenue)

1. Excluding significant items.  
 2. Return on funds employed (ROFE) is based on EBIT before significant items on funds employed at period end.  
 3. Calculated as EBIT before significant items on the average of opening and closing funds employed for the year.  
 4. Includes employees and contractors in 100% owned businesses and all joint venture operations regardless of equity interest.  
 5. In accordance with AASB 133, historical earnings per share has been revised to reflect the bonus element in the equity raising completed in December 2016.  
 6. Includes Boral's 50% share of underlying revenue from USG Boral and Meridian Brick joint ventures, which are not included in Group-reported revenue.  
 7. RIFR is the combined lost time injury frequency rate (LTIFR) and medical treatment injury frequency rate (MTIFR).  
 8. Per million hours worked for employees and contractors in 100% owned businesses including Headwaters, and all joint ventures businesses regardless of equity interest from FY2018 onwards. Data for prior years only includes 50% owned joint ventures and excludes Headwaters.  
 9. GHG emissions data excludes some joint ventures, which in aggregate are not deemed to have material emissions. Emissions intensity based on Group-reported revenue adjusted to include a 50% share of underlying revenue from USG Boral and Meridian Brick joint ventures, which are equity accounted.

# Chairman's review

My first year as Chairman of Boral has been a busy time for the business as we have faced challenges and embraced opportunities. With conditions in our markets more challenging than expected, our businesses responded by taking costs out, resizing activities and seeking opportunities to grow revenues.



## **ADAPTING TO CONDITIONS AND EMBRACING OPPORTUNITIES**

Overall, a 4% increase in revenues to \$5.8 billion and a 2% increase in EBITDA<sup>1</sup> to \$1.03 billion for continuing operations was a solid result.

Net profit after tax (NPAT) before significant items of \$440 million, was 7% lower than last year. Boral's statutory NPAT of \$272 million included \$168 million of post-tax significant items with a profit on sale of the Denver Construction Materials and Texas Block businesses more than offset by the \$174 million impairment of our investment in the Meridian Brick joint venture. The impairment was triggered by further underperformance of Meridian Brick due to lower US and Canadian housing activity and a continued decline in brick intensity per housing start.

## **Strengthening our USG Boral growth platform**

On 26 August we announced that Boral and Knauf have agreed to form an expanded joint venture in Asia and for Boral to return to 100% ownership of the Australian and New Zealand business, with a call option granted to Knauf to buy back a 50% share within five years if Knauf sells its stand-alone Australian plasterboard business, subject to regulatory approvals.

This agreement followed our rigorous review of options in relation to USG Boral, triggered by Knauf's announced acquisition of USG (which closed on 24 April 2019). In reviewing the strategic opportunities for Boral, our approach has been to create value for our shareholders in a way that is aligned with our strategy – and in a way that helps ensure our balance sheet remains strong.

The announced transaction (which is further explained in the CEO's message) is compelling for Boral and our shareholders. It is well-aligned with our strategy, and the plasterboard assets of Knauf in Asia are highly complementary to USG Boral's business in the region. We have maintained a disciplined approach to structuring and funding the transaction, and we are confident that value is created in both the short- and longer-term.

## **Shareholder perspectives**

The Board declared a 50% franked final dividend of 13.5 cents per share, for a full year dividend of 26.5 cents per share. This was steady on last year and represents a payout ratio for the full year of 71%.

We recognise the importance of Boral's dividends to our shareholders, particularly in an environment of volatile share price performance, which has been the case for many stocks, including Boral, over the past 12 months.

Our investor engagement program continued during the year, giving me the opportunity to discuss strategy, governance, safety, climate-related risks and opportunities, and remuneration amongst other issues with our largest shareholders and their representatives. Once again, our Remuneration Report on pages 61 to 82 of Boral's 2019 Annual Report, reflects some of the feedback we have received in recent years.

## **The Board**

The Board has been stable over the past year, with the appointment of Peter Alexander as our first North American-based non-executive Director in September 2018 and his endorsement by shareholders at the 2018 Annual General Meeting.

1. Earnings before interest, tax, depreciation and amortisation, and excluding significant items.  
2. Based on Boral's Scope 1 and Scope 2 emissions of 2.4 million tonnes of CO<sub>2</sub>-e in FY2019 and emissions intensity of 348 tonnes of CO<sub>2</sub>-e per A\$ million of revenue.

Boral's Board continues to benefit from diversity of gender, tenure and experience across a range of sectors, functions and professions. Our board members demonstrate a depth of operational knowledge and experience in building products and construction materials, as well as financial, merger and acquisitions (M&A), and strategy experience. We also have experience across different geographies, specifically Australia, Asia and North America – aligned with Boral's operations.

However, as previously flagged we would like to enhance that experience by having an Asia-based Director with industry experience.

### Our operations and culture

Board site visits, business reviews and employee engagement provide valuable opportunities for the Board to stay connected with our people and see first-hand how we are managing safety, quality and operations, and gain insights into culture, capability and strategy execution.

In September 2018, we spent time at our Roofing, Stone and Fly Ash operations in North America reviewing progress around integration of the Headwaters acquisition, including meeting customers. We returned to the USA in January 2019 for an in-depth review of progress against our long-term Fly Ash supply strategy, which is progressing well.

In November 2018, we met with Boral Australia's customer service and digital solutions teams to better understand how digital innovation is supporting our customers and providing safety enhancements. The Board Health, Safety & Environment (HSE) Committee also spent time at our Thornleigh concrete plant and Peats Ridge Quarry to have a first-hand look at safety in action and to meet with our people on the ground.

Finally, in May 2019 we spent several days with the USG Boral team reviewing business strategies including customer relationships in key markets, safety initiatives, and their

conduct risk and compliance program. In Singapore, we met with several of our sales people and our largest customers from Indonesia. We finished the trip with a visit to our NSW operations at Camellia.

We have confidence that our people are focused on the right things. Boral's leaders are committed to a workplace culture that is safety-focused, customer-centric, embraces diversity and drives for sustainability. There is no tolerance for unethical or unlawful behaviour, and where it is found, appropriate action is taken.

Our commitment is demonstrated through the safety and environmental improvements delivered for FY2019. Boral's recordable injury frequency rate of 7.5 represented a 14% improvement on last year, with all divisions making substantial progress. Boral's greenhouse gas emissions and the emissions intensity<sup>2</sup> of our operations both reduced by a further 7%. Further details are provided in our Sustainability Report.

### Executive development and succession

In February 2019, we announced leadership changes, effective 1 March, intended to provide development opportunities for executives and provide the Board with well developed, experienced and capable internal candidates to be considered for CEO succession and other senior roles at the appropriate time.

At the time we confirmed that we expect Mike Kane to stay in the role as Boral's CEO for another two to three years, which remains the case.

Ros Ng, who has been Chief Financial Officer (CFO) for the past six years, has an expanded role as Group President Ventures & CFO. In addition to group strategy and M&A, Ros has responsibility for the USG Boral and Meridian Brick joint ventures, and she has been leading the execution of our strategy in relation to the USG Boral transaction with Knauf. Ross Harper, who was Executive General Manager Cement, stepped up into the new role of Group

President Operations, to further strengthen our operational, R&D and safety outcomes. Wayne Manners stepped up into the role of President & CEO of Boral Australia from his previous role of Executive General Manager, Western Australia, Building Products & Major Projects, while Joe Goss, who had been Divisional Chief Executive Boral Australia for the previous six years moved to a senior advisory role.

In March 2019, Sims Metals Management (Sims) announced Mike Kane's appointment as a non-executive Director of Sims. Some investors expressed concern this was signalling Mike's early departure from Boral, which is not the case. In consultation with the Board, Mike assessed his capacity to take on the appointment to Sims, without compromising his ability to perform his role as CEO of Boral. The Sims opportunity seemed to be a good fit for Mike, and with senior executive development and succession well progressed, the Board supported Mike's appointment.

From my experience, there is significant advantage in having an external Board role at the same time as being in an executive role. I have found it energising taking on additional responsibilities, and the broader exposure can strengthen one's perspective and knowledge. I know Mike is finding the same.

I thank Mike, the senior team and all of Boral's people, for their hard work, persistence and responsiveness during FY2019 as we continue to transform Boral into a higher performing and more sustainable business.

**Kathryn Fagg**  
Chairman

## BOARD OF DIRECTORS



Mike Kane



Peter Alexander



Dr Eileen Doyle



John Marlay



Karen Moses



Paul Rayner

# Message from Mike Kane

## CEO & Managing Director

In FY2019, as demand softened in several key markets and some external delays and disruptions impacted the industry, we maintained our focus on improving the things we can control.



### DELIVERING OUR STRATEGY

Our strategy is for Boral to be an integrated construction materials player in Australia; a gypsum-based product leader throughout Asia, Australasia; and a leading supplier of fly ash and building products in North America. To harness more sustainable growth, our strategy is focused on investing in less energy-intensive, lighter weight, more innovative products and reducing exposure to lower growth, energy-intensive, higher cost operations.

We have deployed capital from non-core businesses into businesses that we know will secure Boral's future. Specifically, we:

- divested Denver Construction Materials for US\$127 million, in July 2018
- divested the Texas-based Block business for US\$156 million, in November 2018

1. Earnings before interest, tax, depreciation and amortisation, and excluding significant items.  
2. Recordable injury frequency rate (RIFR) and Lost time injury frequency rate (LTIFR) per million hours worked for employees and contractors in 100% owned businesses and all joint venture businesses regardless of equity interest.

- delivered US\$32 million of Headwaters acquisition synergies in year two versus a target of US\$25 million
- progressed our Fly Ash supply strategy by commissioning our first landfill reclaim project and introducing imports from Mexico into the USA, and enhanced our fixed and mobile storage capability
- completed quarry upgrades at Deer Park (Victoria), Orange Grove (Western Australia) and Ormeau (Queensland)
- progressed construction of our \$130 million clinker grinding and storage facility at the Port of Geelong in Victoria, and
- advanced our strategy to move out of brick manufacturing globally with the 23 August 2019 announcement of the sale of Midland Brick to a Western Australian consortium for \$86 million. This follows the \$134 million divestment of the east coast Australian brick business to CSR in November 2016, and leaves the Meridian Brick joint venture in the USA as our last remaining brick business.

This year, we impaired our investment in Meridian Brick by US\$122 million (A\$174 million), as a result of continued underperformance. While our strategy is to exit bricks globally, we are working with our joint venture partners to return the business to profitability.

Finally, and most significantly, on 26 August, we announced that Boral reached agreement with Knauf, the new owners of USG, to form an expanded joint venture in Asia, and for Boral to return to 100% ownership of USG Boral Australia and New Zealand. Boral has agreed to grant Knauf a call option to buy back 50% of the Australian and New Zealand business, within five years, with both the grant and exercise of the call option subject to Australian and New Zealand regulatory approval.

Boral will invest a total of US\$441 million, including US\$200 million to buy the other half of USG Boral Australia and New Zealand. This is a great business and until Knauf exercises its call option, Boral will enjoy 100% of its strong cash flows while continuing to benefit from USG's R&D and intellectual property.

The remaining US\$241 million of Boral's investment represents our 50% share to acquire Knauf Plasterboard Asia, which will become part of the expanded USG Boral Asia joint venture, substantially increasing USG Boral's business in China and strengthening its position across South East Asia.

The expanded USG Boral joint venture in Asia will be a world-class operation, bringing together Knauf – now the largest plasterboard manufacturer in the world – and USG Boral in Asia, which has an enviable position in the fastest growing plasterboard region in the world.

Of Boral's US\$441 million investment, a proportion will be funded within the USG Boral Asia joint venture, with the balance of US\$335 million to be funded by Boral through debt and proceeds from recent divestments.

The transaction is expected to complete around the end of calendar year 2019, and will be immediately value enhancing for Boral's shareholders. Based on FY2019 pro-forma financials, we expect earnings per share accretion of around 3% to 5%, before synergies, and we expect synergies of around US\$30 million per annum in year four.

### Focused on delivering results

While volumes were short of expectation in FY2019 as demand softened in several key markets and some external delays and disruptions impacted the industry, we maintained our focus on improving the things we can control.

For Boral Australia, infrastructure activity has been very strong, but some unplanned delays, disruptions and phasing of projects put pressure on volumes at a time when Australian housing starts were 15% lower in FY2019.

A concerted effort to reduce overhead costs, align our operations with demand and optimise margins, underpinned the strong EBITDA<sup>1</sup> of \$593 million, including Property earnings of \$33 million. This was in line with our long-term average Property earnings but lower than the very high contribution of \$63 million in FY2018. Excluding Property, EBITDA margins were strong and broadly steady at 15.8%.

In FY2019, the US housing market, which drives around half of the earnings in Boral North America, contracted for the first time in eight years, with extreme rainfalls disrupting activity across the country. Against this backdrop, the US business delivered 10% EBITDA growth to US\$297 million (or in Australian dollars, earnings were up 19% to A\$415 million), with better than targeted year two synergies of US\$32 million.

Boral North America EBITDA margins increased from 17.5% to 18.6%, strengthened by synergies, other cost reductions and solid price outcomes.

Boral's equity income from USG Boral was \$57 million compared with \$63 million last year, reflecting a sharp cyclical downturn in housing activity in South Korea. The South Korean market decline; the Australian housing downturn which will flow through in FY2020; and higher input costs more broadly, were the impetus for USG Boral's cost reduction program which is expected to deliver \$21 million of benefits over two years.

Despite the declines in Australian and US housing starts, Boral's revenue growth of 4% to \$5.8 billion and 2% lift in EBITDA to \$1.03 billion from continuing operations, highlights the resilience of the underlying business, especially as Property EBITDA was \$30 million lower than last year.

As we move closer to best practice performance, I am proud of Boral's safety results delivered in FY2019. A recordable injury frequency rate (RIFR)<sup>2</sup> for employees and contractors of 7.5 represents a 14% improvement for the year, and our lost time injury frequency rate (LTIFR)<sup>2</sup> of 1.3, is a 19% improvement on last year. During the year, we increased our focus on lead indicators, recording in excess of 150,000 safety observations across the Group, which demonstrates that our people are committed to delivering Zero Harm Today.

### Boral's outlook

Given our FY2019 results, the outlook for Boral's markets in FY2020, and the trading conditions we have seen in July and August, we expect Boral's net profit after tax (NPAT) before significant items to be around 5–15% lower in FY2020 relative to FY2019.

In FY2020, we expect earnings pressure in Boral Australia as the slowdown in residential construction continues to impact and won't be fully offset by growing volumes in infrastructure projects. Higher than average Property earnings and further benefits from improvement initiatives will help the result.

Boral North America is expected to deliver underlying earnings growth with an additional ~US\$20m of Headwaters synergies expected.

USG Boral will be impacted by the slowdowns in residential construction activity in Australia and South Korea, only partially offset by improvements in other geographies. Of course, once the announced USG Boral/Knauf transaction completes, which is expected around the end of the calendar year, we will see an earnings uplift coming through in the USG Boral plasterboard division.

Beyond FY2020, I am confident that Boral is well placed to deliver medium- and longer-term growth.

In Australia, we expect continued infrastructure growth in coming years, coupled with forecasters expectations of a more modest downturn in residential construction relative to past cycles. In Boral North America, we remain on track to deliver US\$115 million of synergies by the end of FY2021 and our Fly Ash supply strategy is ramping up to deliver growth in the coming years.

In USG Boral, we will benefit from 100% earnings from the Australia and New Zealand business until Knauf exercises its call option. The expanded USG Boral joint venture in Asia is expected to deliver US\$30 million of synergies in year four and should see continued growth through product innovation, penetration of plasterboard products and economic growth in emerging markets.

I am looking forward to continuing in the role of CEO for around two more years, working with Boral's people across 17 countries to deliver on our strategy and to deliver great results.

**Mike Kane**  
CEO & Managing Director

## EXECUTIVE COMMITTEE



**Rosaline Ng**  
Group President  
Ventures & CFO



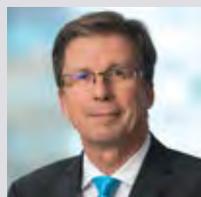
**Ross Harper**  
Group President  
Operations



**Wayne Manners**  
President & CEO,  
Boral Australia



**David Mariner**  
President & CEO,  
Boral North America



**Frederic de  
Rougemont**  
CEO, USG Boral



**Linda Coates**  
Group Human Resources  
Director



**Kylie FitzGerald**  
Group Communications &  
Investor Relations  
Director



**Dominic Millgate**  
Company Secretary



**Damien Sullivan**  
Group General Counsel



**Tim Ryan**  
Group Strategy and M&A  
Director (reporting to Group  
President Ventures & CFO)

# Boral Australia

Boral is the largest integrated construction materials company in Australia, with a leading position underpinned by strategically located quarry reserves and a network of 396 operating sites. We also manufacture and supply a range of building products.

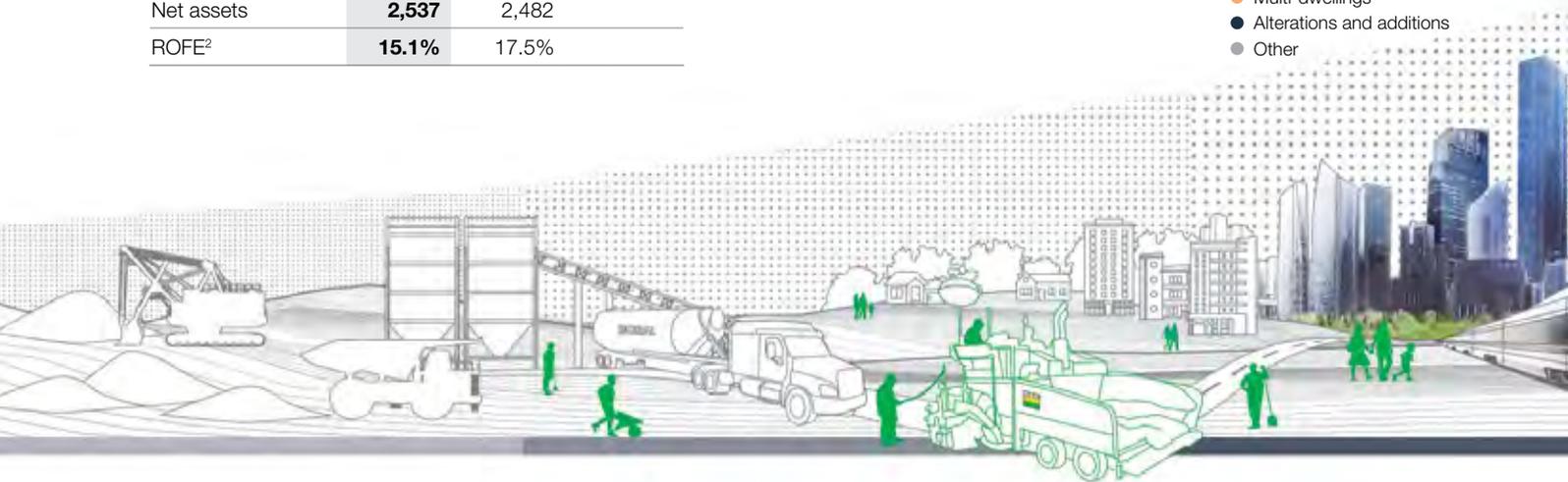
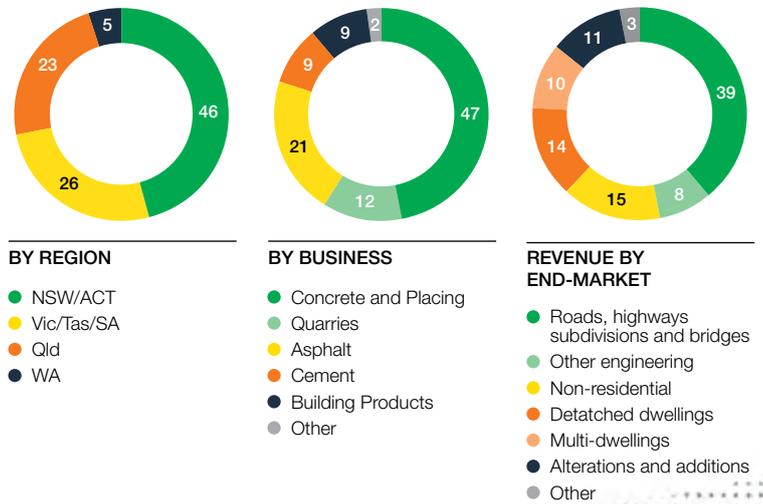
We serve customers nationally in the infrastructure, commercial and residential construction markets.

## BORAL AUSTRALIA

Despite a 15% reduction in residential housing starts and a 6% reduction in concrete volumes, revenue was only down 1%. EBITDA declined 6% to \$593 million, primarily due to lower Property earnings. Excluding Property earnings, EBITDA declined 2% on lower volumes, partly offset by price growth, improvement initiatives and cost savings.

(\$m)	FY2019	FY2018		
Revenue	<b>3,572</b>	3,590	↓	<b>1%</b>
EBITDA <sup>1</sup>	<b>593</b>	634	↓	<b>6%</b>
EBIT <sup>1</sup>	<b>384</b>	433	↓	<b>11%</b>
EBITDA margin <sup>1</sup>	<b>16.6%</b>	17.6%		
EBITDA <sup>1</sup> (excluding Property)	<b>560</b>	570	↓	<b>2%</b>
Net assets	<b>2,537</b>	2,482		
ROFE <sup>2</sup>	<b>15.1%</b>	17.5%		

## BORAL AUSTRALIA REVENUE<sup>3</sup> (%)



## PEOPLE<sup>4</sup>



## RECORDABLE INJURY FREQUENCY RATE<sup>5</sup>



1. Excluding significant items.  
 2. Divisional ROFE is annual EBIT before significant items on divisional funds employed.  
 3. FY2019 external revenue.  
 4. On a full-time equivalent (FTE) basis. Includes corporate and joint venture employees.  
 5. Includes employees and contractors in 100% owned operations and all joint venture operations.  
 6. As at 30 June 2019. Includes clay pits, transport, recycling and R&D sites. Concrete sites include mobile plants. Excludes mothballed plants.  
 7. GHG emissions data excludes some joint ventures which in aggregate are not deemed to have material emissions.

“THIS YEAR, WHILE RIGHTSIZING OUR BUSINESS AND OPTIMISING COSTS WERE PRIORITIES AS HOUSING ACTIVITY SLOWED, WE CONTINUED TO INVEST IN OUR BUSINESS TO STRENGTHEN OUR LEADING POSITION FOR THE LONG TERM, AND TO POSITION BORAL WELL TO SUPPLY AUSTRALIA’S STRONG INFRASTRUCTURE PIPELINE.”

**Wayne Manners**  
President & CEO,  
Boral Australia



**Quarry reinvestment program**

Our quarry reinvestments at Orange Grove (Western Australia) and Ormeau (Queensland) were completed in FY2019. Orange Grove is producing at targeted capacity and Ormeau has reached practical completion and continues to ramp up in line with expectations. Benefits will be delivered from FY2020.



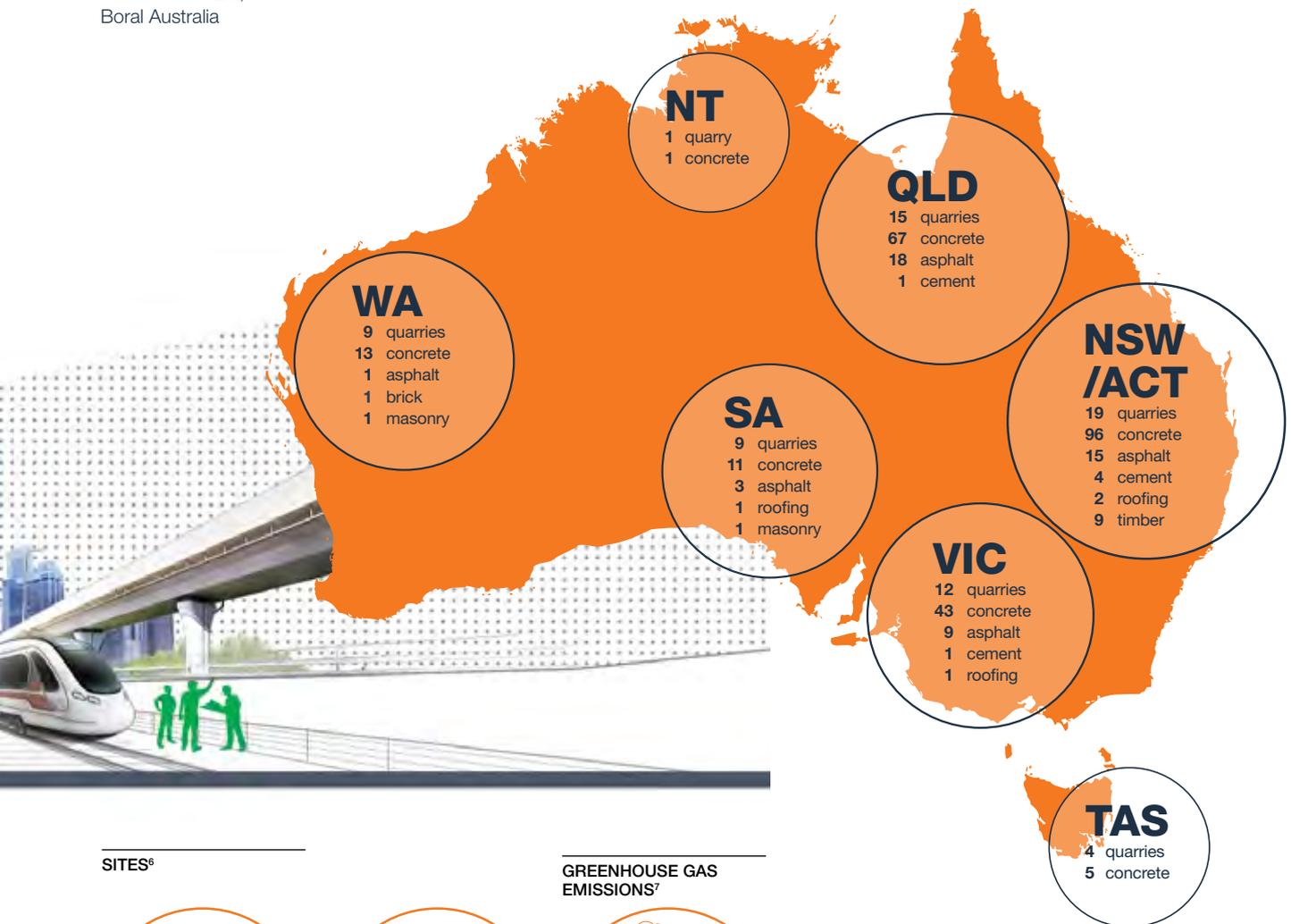
**Cement Geelong storage and grinding facility**

We commenced construction of our new clinker and slag grinding and cement storage facility at the Port of Geelong in Victoria. Our investment of up to \$130 million in a new modern milling plant with capacity of 1.3 million tonnes per annum will also allow for long-term growth and increased flexibility in Boral’s cement supply network with raw material storage of clinker, slag, gypsum and limestone.



**Concrete and asphalt network**

Our concrete and asphalt investment program saw the commissioning of a higher capacity concrete batch plant at West Melbourne, replacing our closed North Melbourne plant. In Asphalt, our new plant at Toowoomba, Queensland is also commissioned.



SITES<sup>6</sup>

GREENHOUSE GAS EMISSIONS<sup>7</sup>



# Boral North America

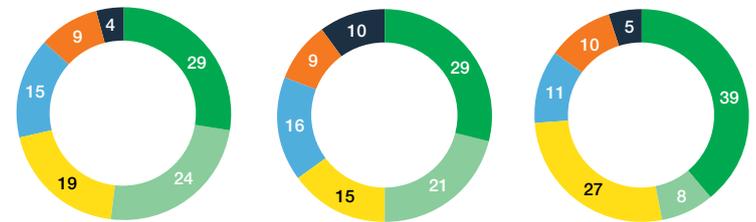
Boral North America has industry-leading positions in fly ash processing and distribution. We also manufacture and supply stone veneer, roof tiles, windows and light building products, including trim, siding and shutters, for residential and commercial markets. Boral has a 50% share of the Meridian Brick joint venture, formed in November 2016.

## BORAL NORTH AMERICA

Revenue grew 12% to \$2,229 million and EBITDA improved 19% to \$415 million, largely driven by growth in building products, particularly Roofing, and US\$32 million of Headwaters synergies, which were partially offset by softer Fly Ash earnings and lower results from the Meridian Brick joint venture. Extreme rainfalls and a 2.4% decline in housing starts impacted volumes.

(\$m) <sup>1</sup>	FY2019	FY2018		
Revenue	<b>2,229</b>	1,989	↑	<b>12%</b>
EBITDA <sup>2</sup>	<b>415</b>	349	↑	<b>19%</b>
EBIT <sup>2</sup>	<b>252</b>	199	↑	<b>27%</b>
EBITDA margin <sup>2</sup>	<b>18.6%</b>	17.5%		
Net assets	<b>4,535</b>	4,514		
ROFE <sup>3</sup>	<b>5.6%</b>	4.4%		

## BORAL NORTH AMERICA REVENUE<sup>4</sup> (%)



### BY REGION

- Southeast
- Southwest
- West
- Midwest
- Northeast
- International

### BY BUSINESS

- Fly Ash
- Roofing
- Stone
- Light building products
- Windows
- Meridian Brick

### REVENUE BY END-MARKET

- Single family
- Multi-family
- Repair and remodel
- Non-residential
- Infrastructure
- Other



1. Continuing operations basis.
2. Excluding significant items.
3. Divisional ROFE is annual EBIT before significant items on divisional funds employed.
4. Based on external revenue, including Boral's 50% share of the Meridian Brick joint venture revenue, which is not included in reported revenue.
5. On a full-time equivalent (FTE) basis. Includes corporate and joint venture employees.
6. Includes employees and contractors in 100% owned operations and all joint venture operations.
7. As at 30 June 2019. Includes 44 clay mines and four R&D sites. Excludes mothballed plants and distribution locations.
8. GHG emissions data excludes some joint ventures which in aggregate are not deemed to have material emissions.

## PEOPLE<sup>5</sup>



## RECORDABLE INJURY FREQUENCY RATE<sup>6</sup>



“THE INTEGRATION OF HEADWATERS AND DELIVERY OF SYNERGIES IS PROGRESSING WELL, AND WE ARE ON TRACK TO ACHIEVE OUR YEAR-FOUR SYNERGY TARGET AND DELIVER GROWTH.”

**David Mariner**  
President & CEO,  
Boral North America



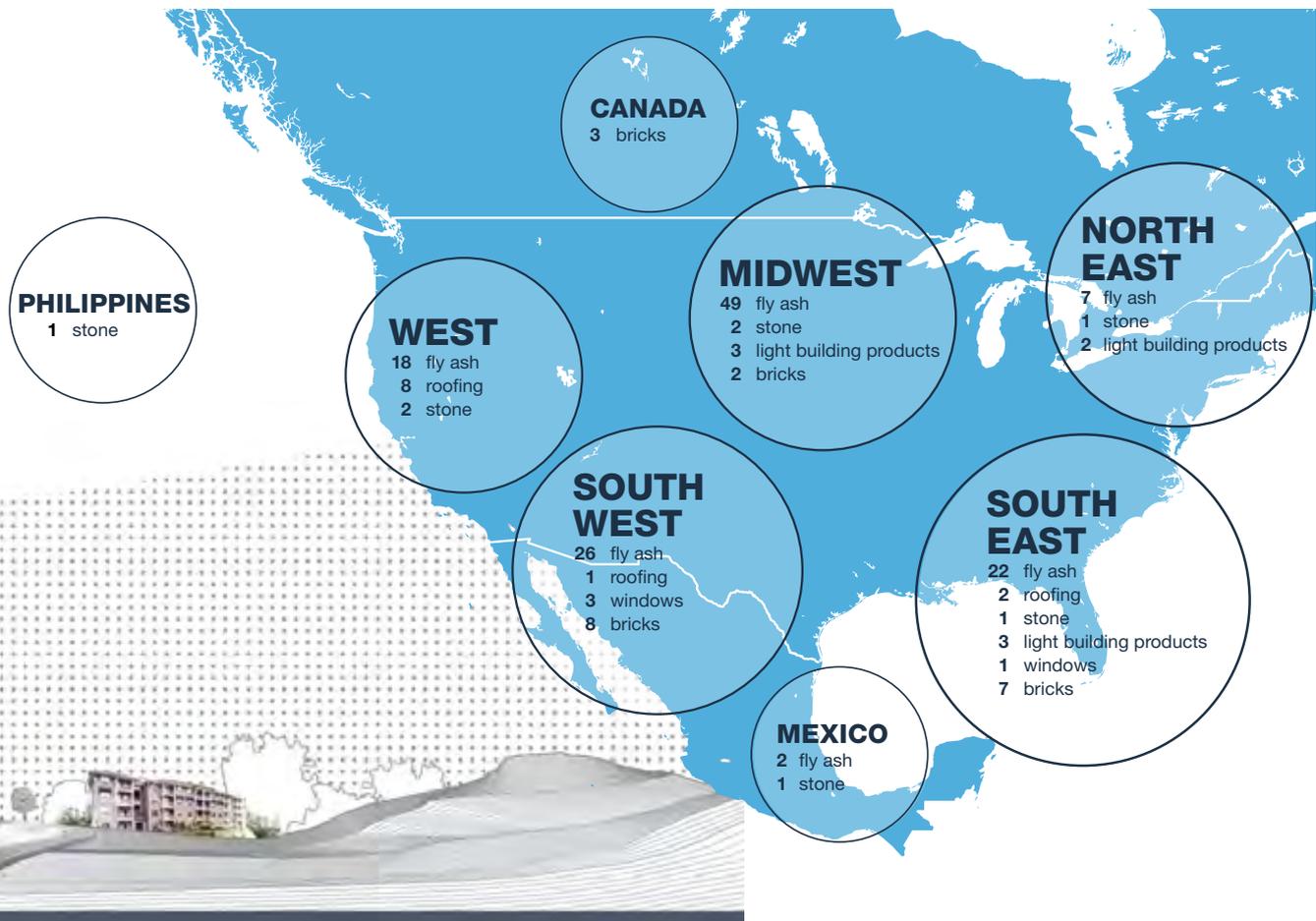
**Montour reclaim operation**

In the Fly Ash business, our first landfill reclaim operation at Montour in Pennsylvania was commissioned during the year with volumes ramping up by year end, after a slow winter. We continue to make good progress to deliver our target of a net increase of 1.5–2 million tons per annum on FY2018 volumes of available fly ash over the next two years.



**Capital upgrades at our stone plants**

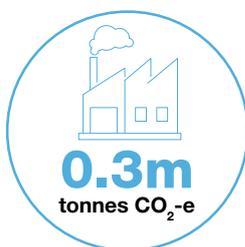
Capital upgrades were completed at our Ohio and Mexico manufactured stone plants, increasing efficiency and improving safety. The Ohio plant has been converted to a high-efficiency, automated plant, which is driving cost savings and has eliminated manual handling. Upgrades to the Mexico plant have increased manufacturing capacity and significantly reduced machine, vehicle and human interaction. Safety performance has drastically improved and staff turnover has halved. The plants produce premium manufactured stone brands: StoneCraft® in Ohio and Eldorado Stone® in Mexico. Both supply product to the US and Canadian markets.



**SITES<sup>7</sup>**



**GREENHOUSE GAS EMISSIONS<sup>8</sup>**



# USG Boral

Through Boral's 50:50 joint venture with Knauf/USG Corporation, we are a leading manufacturer and supplier of wall and ceiling solutions. With a presence in 14 countries across Asia Pacific and the Middle East, USG Boral produces plasterboard-based wall and ceiling lining systems, mineral fibre ceiling systems, metal framing, joint compounds, high performance panels and accessories.

## USG BORAL

Boral's equity accounted income of \$57 million, down 10% on the prior year, represents Boral's 50% share of USG Boral's underlying post-tax earnings. Revenue increased 2% to \$1,606 million in the underlying business, reflecting top-line growth in Thailand, China, Vietnam and India, and a steady contribution from Australia. This was largely offset by a market-driven decline in South Korea and heightened competition in Asia, particularly in Indonesia.

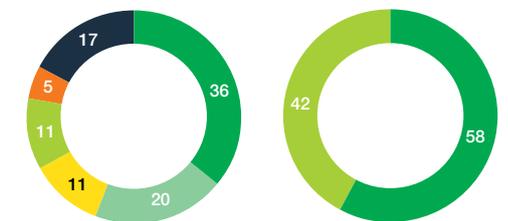
### BORAL'S REPORTED RESULT

(\$m)	FY2019	FY2018		
Equity income <sup>1,2</sup>	57	63	↓	10%

### USG BORAL UNDERLYING BUSINESS RESULT

(\$m)	FY2019	FY2018		
Revenue	1,606	1,575	↑	2%
EBITDA <sup>2</sup>	252	268	↓	6%
EBIT <sup>2</sup>	168	194	↓	13%
EBITDA margin <sup>2</sup>	15.7%	17.0%		
Net assets	2,082	1,955		
ROFE <sup>3</sup>	8.1%	9.9%		

## USG BORAL REVENUE<sup>4</sup> (%)

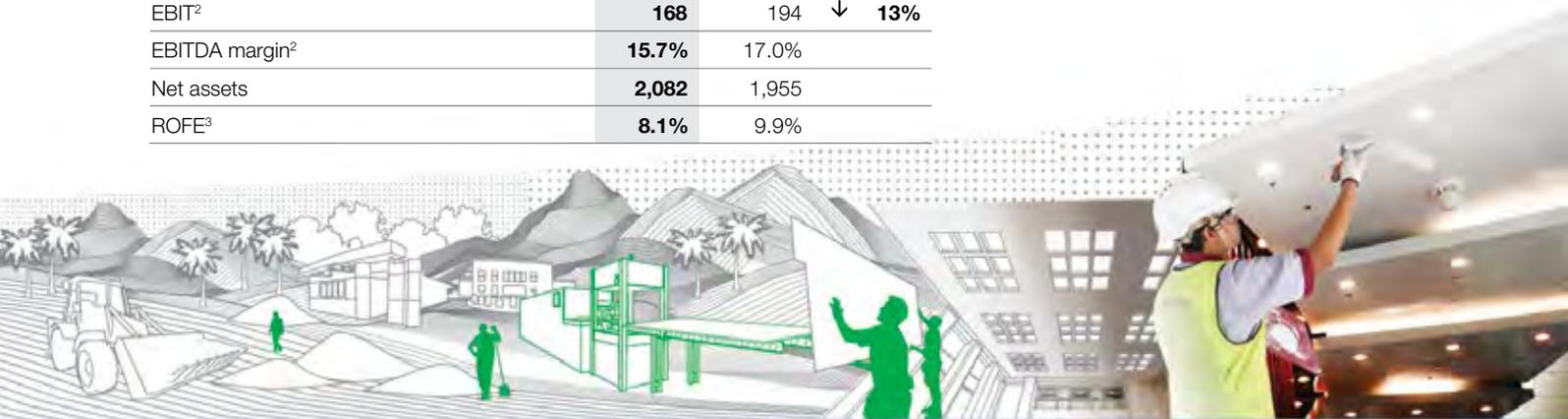


### BY COUNTRY

- Australia/NZ
- South Korea
- Thailand
- China
- Indonesia
- Other

### BY PRODUCT CATEGORY

- Plasterboard
- Non-board



1. Post-tax equity income.
2. Excluding significant items.
3. Divisional ROFE is annual EBIT before significant items on divisional funds employed.
4. FY2019 external revenue.
5. On a full-time equivalent (FTE) basis. Includes corporate and joint venture employees.
6. Includes employees and contractors in 100% owned operations and all joint venture operations.
7. As at 30 June 2019. Certain manufacturing facilities and gypsum mines are held in joint venture with third parties.
8. Million square metres (m<sup>2</sup>)
9. GHG emissions data excludes some joint ventures which in aggregate are not deemed to have material emissions.

## PEOPLE<sup>5</sup>



## RECORDABLE INJURY FREQUENCY RATE<sup>9</sup>





# Responding to a changing world

	RISKS		
	Health, safety and environment (HSE) and social risks	Industry and market risks	
	<ul style="list-style-type: none"> <li>• Heightened stakeholder expectations</li> <li>• Injury and accidents</li> <li>• Acute environmental damage</li> <li>• Regulatory requirements</li> <li>• Community impacts</li> <li>• Physical climate-related risks</li> <li>• Human rights and workplace relations</li> <li>• Conduct risk, anti-corruption</li> <li>• Sustainable supply chain and modern slavery</li> </ul>	<ul style="list-style-type: none"> <li>• Structural and cyclical demand changes</li> <li>• Political and regulatory change</li> <li>• Macroeconomic and geopolitical conditions</li> <li>• Inflationary impacts from rising input costs</li> <li>• Movements in foreign exchange rates</li> <li>• Future resource supply constraints</li> <li>• Changes to construction methods and materials</li> <li>• Changing demographics and urbanisation</li> </ul>	
EXAMPLES OF DIVISIONAL INITIATIVES / RESPONSES	BORAL GROUP RESPONSES	<ul style="list-style-type: none"> <li>• Group-wide <b>commitment to Zero Harm</b> <b>27</b></li> <li>• Global <b>HSEQ management system</b> and minimum standards <b>27-28</b></li> <li>• <b>HSE performance monitoring</b>, reporting and accountability <b>21</b></li> <li>• Monitoring <b>regulatory changes</b> and engaging with regulators</li> <li>• Progressive adoption of TCFD recommendations including <b>climate-related scenario analysis</b> <b>32-42</b></li> <li>• <b>Flood mitigation</b> plans <b>35</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Diversified business portfolio</b> to reduce impacts of individual geographies and markets</li> <li>• Continued <b>monitoring of government policies</b> including tax, labour and infrastructure policies</li> <li>• US debt utilised to <b>limit impacts of foreign exchange</b> rate movements</li> <li>• <b>Staged and long-dated debt maturity</b> profile</li> <li>• <b>Adequate liquidity</b> via committed undrawn facilities and cash</li> <li>• Energy inputs hedged and interest <b>rates swapped to reduce cyclical impacts</b></li> </ul>
	<ul style="list-style-type: none"> <li>• Group-led <b>diversity and inclusion</b> program <b>24-25</b></li> <li>• <b>Organisational culture</b> work <b>25</b></li> <li>• Leadership development and <b>workforce capability</b> building activities <b>26</b></li> <li>• Supply chain <b>modern slavery risk</b> framework <b>51</b></li> <li>• Third-party managed <b>whistleblower hotline</b>, monitoring and reporting in all jurisdictions <b>22, 51</b></li> <li>• <b>Heavy vehicle safety</b> management to meet Heavy Vehicle laws as a minimum <b>46</b></li> <li>• <b>Vehicle and pedestrian interaction</b> improvement initiatives <b>46</b></li> <li>• <b>Community consultation</b> programs and initiatives to minimise impacts of operations <b>25</b></li> <li>• <b>Flexible work policy</b> and guidelines <b>25</b></li> <li>• <b>Ongoing post-Headwaters integration</b> review of safety exposures and compliance, including audits <b>31</b></li> <li>• <b>Dedicated capital investment</b> for safety enhancement projects in Headwaters acquired businesses <b>31</b></li> <li>• <b>Safety management and recovery plans</b> for major weather events <b>36</b></li> </ul>	<ul style="list-style-type: none"> <li>• Group procurement to optimise cost base and mitigate supply constraints <b>50</b></li> <li>• Cost out initiatives and rightsizing resources to market conditions</li> <li>• <b>Investment in R&amp;D</b>, innovation and customer-centric programs <b>49</b></li> <li>• Leveraging demand shift to major infrastructure through <b>investments in quarries, asphalt and concrete</b> operations and <b>strengthened project capability</b> <b>11</b></li> <li>• <b>Strengthened import capability</b> with Boral Cement Geelong clinker import terminal under construction in Victoria <b>11</b></li> <li>• Reducing costs through <b>Operational Excellence</b> programs including Supply Chain Optimisation and <b>Organisational Effectiveness</b> programs <b>50-51</b></li> <li>• <b>Reposition portfolio</b> from high fixed cost, energy intensive to lighter building products, with more variable cost base</li> <li>• Delivery of <b>synergy targets</b> to reduce costs, achieve efficiencies, and capture growth</li> <li>• <b>Fly Ash strategic initiatives</b> and network optimisation to grow supply and enhance returns <b>34</b></li> <li>• <b>Product leadership</b> and <b>product differentiation</b> strategy underpinning performance <b>48</b></li> <li>• <b>Securing gypsum supply</b> through acquisition of reserves and stable supply agreements <b>37</b></li> <li>• Long-term <b>raw material supply contracts</b>, e.g. paper</li> <li>• <b>Cost reduction program</b> and lean initiatives <b>9</b></li> </ul>	
	BORAL AUSTRALIA		
	BORAL NORTH AMERICA		
	USG BORAL		
	<ul style="list-style-type: none"> <li>• <b>HSE standards</b> applied consistently across Asia, Australasia and the Middle East <b>28</b></li> <li>• <b>Anti-corruption measures</b> including clear accountability, policies, training, and audits <b>22</b></li> <li>• Use of <b>CCTV to aid incident investigations</b> and improvements <b>31</b></li> </ul>		

**To achieve our strategic objectives and create value for our stakeholders, we need to adapt to a continually changing external environment by mitigating potential risks and capturing opportunities.**

Group Risk manages Boral's risk identification and management process, which includes an annual bottom-up assessment and review. Here, we identify some of our main near- and longer-term risks and challenges across our business. We carefully manage these risks and, when necessary, adapt our strategies to drive success. We highlight some of the actions we are taking in response to the challenges we face. Page references indicate where the topics are covered throughout this report.

Further information about risk identification and management at Boral can be found in the Corporate Governance Statement in the 2019 Annual Report. Boral's Risk Management Policy is also available on our website.

Competition risks	Business interruption risks
<ul style="list-style-type: none"> <li>• New capacity and market entrants</li> <li>• Customer concentration</li> <li>• Pricing dynamics</li> <li>• Regulatory requirements</li> <li>• Technology/R&amp;D and product innovation</li> <li>• Disruptive product innovation and product substitution</li> </ul>	<ul style="list-style-type: none"> <li>• Plant and systems failure</li> <li>• Cybersecurity</li> <li>• Weather impacts</li> <li>• Reserves and resources</li> <li>• Supply chain failure</li> <li>• Business conduct/reputational damage</li> <li>• Digital disruption</li> <li>• Business partnerships misalignment</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Monitoring</b> and reporting <b>regulatory changes</b> and industry trends</li> <li>• <b>Transformation Action Group</b> to foster new ways to make and sell new and existing products</li> <li>• <b>Leveraging technology</b> for more targeted sales and marketing <b>49</b></li> <li>• Centralised <b>competition law training</b></li> <li>• Regionally based dedicated <b>R&amp;D teams</b> focused on <b>product innovation</b> <b>49</b></li> <li>• <b>Commercial Excellence</b> and Customer Experience initiatives to improve customer-centricity, enhance service and grow margins <b>49</b></li> <li>• <b>Supply Chain Optimisation program</b> enhancing supply logistics and reducing costs <b>50–51</b></li> <li>• <b>Innovation hub</b> focused on identifying and implementing new technologies and processes <b>26</b></li> <li>• Dedicated <b>Integration and Synergy Delivery program</b></li> <li>• Divisional <b>procurement strategy and initiatives</b> to enhance supply chain, including logistics and continuity of supply, and reduce costs <b>50–51</b></li> <li>• Regionally focused <b>product price</b> analytics and sales strategies</li> <li>• <b>National R&amp;D centre</b> to bring new technologies and products to market <b>49</b></li> <li>• <b>Expanded product portfolio</b> aimed at enhancing revenue and earnings <b>15, 48</b></li> <li>• <b>Innovation investment</b> to further strengthen competitive advantage, e.g. EcoSmart Panels, Ensemble™ <b>49</b></li> <li>• <b>New enterprise resource planning (ERP) system</b>, initially in Australia with roll-out to other countries planned</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Business continuity planning</b> with regular crisis simulations</li> <li>• <b>Disaster recovery plans</b> in place for critical IT systems and operational equipment</li> <li>• Formal bottom-up <b>enterprise risk management processes</b> <b>35</b></li> <li>• <b>Geographically diversified portfolio</b> mitigates regional weather events <b>35</b></li> <li>• <b>Reserves planning</b> and <b>capital optimisation</b></li> <li>• Centralised <b>Code of Business Conduct</b> and associated policies <b>22</b></li> <li>• Centrally managed <b>data breach monitoring</b> and response <b>23</b></li> <li>• <b>Cybersecurity plans</b> coordinated across divisions and aligned with National Institute of Standards and Technology (NIST) Cybersecurity Framework <b>23</b></li> <li>• <b>Governance structures</b> to monitor performance of third-party agreements and joint ventures</li> <li>• Boral Digital Services using <b>agile processes and cloud-based</b> application and storage</li> <li>• <b>Targeted technology enhancements</b> to improve operational and core financial systems</li> <li>• Monitoring and <b>preparedness for weather affected disruption</b> including water management plans, flexible workforces and additional equipment <b>35–36</b></li> <li>• <b>Long-term availability of fly ash</b> monitored and future sources identified including reclamation of landfilled ash <b>13, 34</b></li> <li>• <b>Prioritisation of capital investment</b> aligned with product and market growth, with focus on increasing fly ash storage</li> <li>• Streamlining and <b>upgrading IT systems</b> and investment in cybersecurity controls and tools <b>23</b></li> <li>• <b>New IT implementation</b> in key regions, e.g. ERP solution in Australia</li> <li>• <b>Investment in cybersecurity</b> controls and monitoring <b>23</b></li> <li>• Improved <b>anti-bribery</b> and <b>competition training</b> <b>22</b></li> </ul>

# FY2019 highlights

## OUR SUSTAINABILITY PRIORITIES



Deliver world-class health and safety outcomes for our people based on **Zero Harm Today**

- ✓ 14% improvement in recordable injury frequency rate
- ✓ Zero fatalities among employees and contractors
- ✓ Increased focus on lead indicators with >150,000 hazards identified
- ✓ Vehicle and pedestrian interaction improvement initiatives



Attract a **diverse, capable and engaged workforce**, enabling them to deliver their best

- ✓ Favourable pay equity outcomes of 1:1 female-to-male base salaries in Boral Australia
- ✓ Increased representation of women to 19%, up 1%
- ✓ Launched flexible work guidelines
- ✓ Improved employee engagement score in USG Boral
- ✓ More than 680 employees participated in zero|one|ten Leader program



Reduce our carbon emissions and build our resilience to **climate-related impacts**

- ✓ 7% reduction in Scope 1 and 2 GHG emissions and emissions intensity
- ✓ 10% of revenue from lower carbon and high-recycled-content products, up 1%
- ✓ Low-carbon fuels program at Berrima Cement Works (Berrima) contributed to reduced emissions
- ✓ Strengthened climate-related management and reporting using TCFD framework



Minimise our **environmental footprint**

- ✓ Significantly reduced value of fines and penalties, indicating less severe non-compliances
- ✓ Completed review of risks associated with impoundments and small dams



Deliver superior performing, innovative and **sustainable products and solutions**

- ✓ Lower carbon ENVISIA® concrete approved to supply Queensland infrastructure projects
- ✓ Progressing plant trials of USG-developed Sheetrock® EcoSmart Panels
- ✓ Investing in innovation with ~\$30 million spent on R&D



Deliver better outcomes for **our customers**

- ✓ Broader roll-out of Boral Connects, a customer portal to improve customers' experience in Boral Australia
- ✓ Supply Chain Optimisation program in Boral Australia and Boral North America focused on improving our customers' experience
- ✓ New customer-centric improvement program launched in USG Boral



Operate ethically and make a positive contribution to our **local communities**

- ✓ Strengthened our approach to modern slavery risk in our operations and supply chain
- ✓ Launched Boral's 2019-2020 Reflect Reconciliation Action Plan
- ✓ Contributed \$1.3 million to our community partnerships and local community causes and projects

# Managing sustainability

Our commitment and approach to sustainability is embedded in our business strategy and all that we do. We strive to deliver returns above our cost of capital through the cycle for our shareholders and to create value for all our stakeholders. We recognise that delivering sustainable outcomes is vital to our long-term success.

## OUR SUSTAINABILITY APPROACH

To meet the sustainability challenges of today and tomorrow, it is critical that we drive progress and continuous improvement. Our governance, accountability, management systems and reporting frameworks help us drive better outcomes and meet the evolving and increasing expectations of our stakeholders.

In FY2019, we continued to improve our safety outcomes, reduce our carbon emissions, and increase gender diversity in our workforce. We enhanced our customer experience through digital tools and solutions, strengthened our governance, strategy and risk management of climate-related impacts, and enhanced our supply chain, including our approach to identifying and managing modern slavery risk.

We also continued to strengthen our sustainability approach and reporting. We:

- enhanced our climate-related disclosure, as we progressively adopt the recommendations of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD)
- strengthened how we identify and manage modern slavery risks in our operations and supply chains, as we prepare to publish a Modern Slavery Statement in 2020
- broadened our sustainability metrics and related information that has been subject to independent assurance – these metrics are listed in Ernst & Young's (EY's) assurance statement on page 52, and
- identified the United Nations Sustainable Development Goals (SDGs) and targets we can most impact and integrated these into our sustainability reporting.

We will consider how we can further contribute to the SDGs through our planning and sustainability approach, and report on our progress.

## HOW WE REPORT

This Sustainability Report outlines our performance and approach to material environmental and social issues, and how we govern sustainability. Our material sustainability issues and materiality assessment process are outlined on page 20.

Additional information on Boral's sustainability performance and approach is available:

- in the Corporate Governance Statement and Directors' Report in our 2019 Annual Report, and
- on our website, including our policies, supplementary sustainability information, Reconciliation Action Plan, Tax Transparency Report, reports to the Workplace Gender Equality Agency, community engagement programs, and Boral News magazine. [Website](#)

We welcome feedback on our reporting via [info@boral.com.au](mailto:info@boral.com.au).

## REPORTING SCOPE

This Sustainability Report covers Boral's wholly owned operations and joint ventures that were at least 50% owned by Boral for the year ended 30 June 2019, unless otherwise stated.

Boral's HSE data includes joint venture entities, irrespective of equity or management control. Safety data includes employees and contractors in all businesses.

Safety data reported prior to, and including FY2017, includes 100% owned businesses and joint ventures where our equity interest was 50% or more – and has not been retrospectively adjusted.

While Boral's joint ventures have their own management structure and regulatory responsibilities, we expect them to meet the same minimum HSE standards as fully owned Boral sites.

HSE data for Headwaters businesses, acquired in May 2017, is consolidated from FY2018.



# Managing sustainability

(continued)

## OUR MATERIAL SUSTAINABILITY ISSUES

We define our material sustainability issues by undertaking a formal biennial materiality assessment, which forms part of our broader risk management processes.

We assess materiality, in the context of sustainability, based on the significance of issues to Boral and to our stakeholders. Specifically, our issues were assessed with reference to the Global Reporting Initiative's (GRI's) definition of materiality which covers 'significant economic, environmental and social impacts; or the issues that substantively influence the assessments and decisions of stakeholders.'

In FY2019, we updated the materiality assessment completed in FY2017, to consider evolving stakeholder priorities, megatrends, regulatory developments, and Boral's strategy, risks and opportunities.

The materiality assessment process involved:

- **a desktop assessment**, including peer and media analysis, and analysis of global frameworks and industry reports
- **internal workshops and discussions** with multidisciplinary leaders, including Executive Committee members with an understanding of our key external stakeholder groups

- **issue prioritisation** based on the findings of the desktop analysis and internal stakeholder feedback, and
- **validation** and final review of the outcomes by senior executives.

We engaged EY to undertake the desktop assessment and help us validate the outcomes.

The updated materiality assessment identified 14 material issues, some of which were previously embedded in broader categories. These are outlined in the table below. In addition, the future of work was identified as an emerging issue.

## United Nations Sustainable Development Goals

In collaboration with members of Boral's leadership team involved in the materiality assessment, and a broader representative group from the business, we identified which of the 17 SDGs and 169 SDG targets Boral can most significantly contribute to. We prioritised 10 SDGs and 20 SDG targets that are most closely connected with our business strategy and material sustainability issues.

### Prioritised United Nations Sustainable Development Goals and targets

SDGs										
SDG targets	3.6	5.1, 5.5	6.4, 6.5	7.3	8.2, 8.5, 8.7, 8.8	9.1, 9.4, 9.5	11.6	12.2, 12.4, 12.5	13.1, 13.3	15.2

Boral's material sustainability issues											Pages
Culture and business conduct											22
Cyber and data security											23
Diversity, inclusion and equality											24–25
Employee development and engagement											25–26
Human rights and workplace relations											26
Health, safety and wellbeing											29–31
Climate-related impacts											32–42
Energy											39
Environmental impacts											43–45
Social and community impacts											46–47
Customers											48–49
Sustainable products and innovation											48–49
Sustainable procurement											50–51
Supply chain logistics											51

## SUSTAINABILITY GOVERNANCE

The **Board of Directors** maintains oversight of sustainability matters, including strategy, risk identification and management, and external reporting.

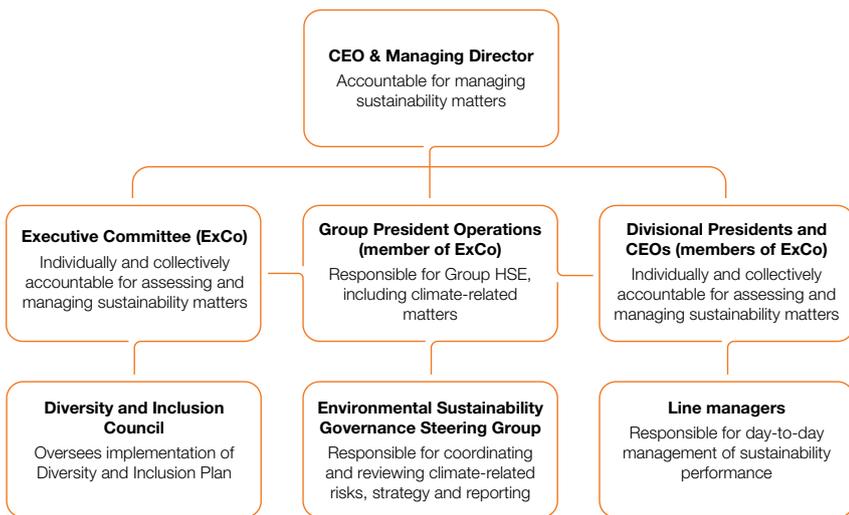
The **Board Health, Safety & Environment (HSE) Committee** is responsible for reviewing and monitoring:

- the Group's performance, assessed by reference to agreed targets and measures, in relation to HSE matters
- the effectiveness of Boral's policies, systems and governance structure in identifying and managing HSE risks which are material to the Group, and
- the policies and systems for ensuring compliance with applicable legal and regulatory requirements associated with HSE matters.

Divisional management teams and the corporate HSE function report on HSE performance, risks and management actions, including climate-related matters, to the Board HSE Committee on a quarterly basis. The Board HSE Committee considers energy and climate-related issues at each of its meetings.

The **Board Audit & Risk Committee** is responsible for satisfying itself that a sound system of risk oversight and management exists, and that internal controls are effective. It meets at least four times per year and receives an annual report on our organisation-wide risks, including climate-related risks.

### Management responsibility



Sustainability is embedded into Group and business-level strategies, action plans and reporting, with performance monitored at a divisional and corporate level through relevant senior executives.

Line managers are supported by divisional specialist managers across HSE, procurement, human resources, marketing and community engagement, as well as corporate HSE and human resources teams. The corporate HSE team is responsible for policy, governance and functional leadership, in consultation with divisional specialists.

Sustainability risks are also integrated into Boral's organisation-wide risk management processes, which identify, assess and monitor the organisation's risks.

Further information on our governance of climate-related impacts is on page 35.

## OUR APPROACH

**Our approach to sustainability is underpinned by:**



### Effective governance and risk management

For further information, refer to the Corporate Governance Statement in our 2019 Annual Report.



### Open and constructive engagement with our stakeholders

A summary of our stakeholders' priorities and how we engage and incorporate stakeholder feedback is available on our website. [ES](#)



### Monitoring and transparent reporting on our material issues

Sustainability performance is monitored and reported at a divisional level and corporate level through relevant senior executives. We report on our progress to stakeholders through our Sustainability Report and Annual Report.

## Management remuneration

Managing sustainability, including safety, is considered an integral component of leadership, and is considered in reviewing performance and setting fixed remuneration increases. We therefore do not link remuneration incentives to sustainability metrics, including safety performance.

The Board has discretion to adjust executive remuneration outcomes if there is evidence that a breakdown in management oversight and processes has led to poor outcomes, including in safety performance.

# Managing sustainability

(continued)



## CULTURE AND BUSINESS CONDUCT

**Working with integrity, respect and fairness is fundamental to how we do business, and is underpinned by our values. We expect all employees and people representing Boral to meet the highest ethical standards as well as observing both the letter and spirit of the law.**

Demonstrating strong ethical principles in all that we do is vital to our reputation and our ability to deliver long-term value to all of our stakeholders, including shareholders, customers, employees and communities.

Our Code of Business Conduct (Code) and supporting policies set out the high ethical standards we expect everyone to adhere to across our international operations. We are committed to working with third parties, including customers, subcontractors, distributors, suppliers and joint venture partners, whose business ethics and behaviour are consistent with our Code.

Our commitment to anti-corruption compliance is reflected in our Code, which prohibits bribery and corruption in all forms, whether direct or indirect. Our anti-corruption measures include clear policies, accountability, training, reporting and audit review. Conduct risk and corruption risk are also assessed through our enterprise risk management review process.

### Political donations

Boral's Code prohibits political donations or contributions.

## OUR VALUES



### Excellence

Ambitious and disciplined in pursuit of the highest standards of performance



### Integrity

Open, honest, respectful and authentic in all our dealings



### Collaboration

Working across businesses and developing partnerships



### Endurance

Operating for the long term rather than the quick fix, ever improving

We complement our policy and risk management framework with clear communication and training on the Code and associated policies in our induction training and ongoing refresher training programs. The USG Boral joint venture conducts additional risk-based anti-corruption training and has established an externally managed anti-corruption audit program.

The Board and senior management take breaches of the Code or other misconduct very seriously. We have consistent and transparent policies and practices in place to address any non-compliance with our Code and supporting policies. Formal consequences include additional training, impact on reward and promotion, formal warnings and termination.

In FY2019, 246 employees of Boral Australia and Boral North America were dismissed, up from 183 in FY2018. This represents 2% of our employees in these two divisions. Of these dismissals, 62 were for breach of policy or misconduct, with the remaining 184 due to violation of rules or poor performance. They ranged from managers to frontline employees. These matters were considered isolated incidents and not systemic.

We provide easy and clear avenues for our people to report ethical concerns and improper behaviour. In addition to internal reporting channels – via senior management, human resources, internal audit and legal – we provide an external independent whistleblowing service, known as FairCall. Reports via FairCall can be made on an anonymous basis, and we are committed to maintaining the independence, impartiality and confidentiality of the reporting and investigative processes. The Company Secretary reports on these matters to the Board Audit & Risk Committee.

## TAX TRANSPARENCY

Boral's approach to taxation is consistent with our Code and our tax function works within our broader governance and risk management framework.

We are committed to meeting our taxation obligations in the jurisdictions where we conduct business, and to paying our taxes on time. Tax outcomes do not drive our business transactions.

In response to the Australian Voluntary Tax Transparency Code, we have published an annual Tax Transparency Report on our website since 2017. [The report](#) discloses Boral's approach to taxation and information on our Australian and global income taxes and other taxes paid in Australia.

## CYBER AND DATA SECURITY

Businesses face a growing risk of cybersecurity breaches and attacks on information systems by increasingly sophisticated cybercriminals.

In response, we have increased investment in cybersecurity controls and monitoring across the Group to mitigate potential risks to our technical infrastructure, data security and customer privacy.

Boral's cybersecurity response plan aligns with the National Institute of Standards and Technology (NIST) Cybersecurity Framework, which is recognised as global best practice. During the year, we implemented improvement plans to achieve NIST targets across each of our divisions.

Cybersecurity managers in each division are responsible for reviewing our security framework, and developing mitigation and improvement plans. We also engage third-party cybersecurity specialists to conduct regular penetration testing to assess security controls and identify required remediation measures.

In FY2019, we rolled out a Group-wide information security awareness training program to all employees, and cybersecurity training to all USG Boral employees.

The Board monitors cybersecurity risks and strategy, and engages with external experts and internally with Boral's Digital Solutions team to understand cybersecurity risks.

## HUMAN RIGHTS

We support the United Nations Guiding Principles on Business and Human Rights, and are committed to respecting and promoting internationally recognised human rights through our operations and supply chain.

Our Human Rights and Modern Slavery Working Group, established in FY2018, continues to support work being undertaken to further develop our approach to modern slavery in light of the *Modern Slavery Act 2018*. The working group comprises members of Boral's Executive Committee and key functional roles, including human resources, procurement, risk and legal.

Details about our approach and work undertaken to strengthen how we assess and manage modern slavery risk in our operations and supply chain can be found on pages 26 and 51 respectively.



## INDUSTRY ASSOCIATIONS

We are members of, and actively participate in, a number of industry associations in Australia and the USA.

These industry associations offer a forum for sharing industry best practice and new ideas, developing technical standards, and advocating on behalf of the industry, to the government and the community.

Participants in industry associations are provided competition law training to ensure that association with other industry participants is always compliant with the law.

The associations also develop public policy positions. Typically, the policy positions of our industry associations are to support regulation in the national and industry interest, and encourage business to sustainably prosper and remain competitive.

We acknowledge that some industry associations may have policy positions that do not fully align with Boral's positions. When appropriate, we engage with our industry associations to help them understand our position.

We have not identified any major energy and climate policy positions held by our industry associations that are materially inconsistent with our own position.

We support:

- a national approach to climate and energy policy that targets least-cost carbon emissions abatement while delivering reliable and competitive energy, and
- climate and energy policies that do not unduly erode the competitiveness of domestic-based businesses.

We support mechanisms to achieve the objectives of the Paris Agreement and a national approach to climate and energy policy.

Boral's major industry associations are:

- Business Council of Australia
- Cement Industry Federation
- Cement Concrete & Aggregates Australia
- Australian Asphalt Pavement Association, and
- American Coal Ash Association.

Further information is available on our website. [📄](#)

# Our people

We strive to have a diverse, talented and capable workforce, so we can continue to succeed and innovate. We work to develop our people, build a culture of respect and trust, and enhance our employees' experience.

**As at 30 June 2019, we had 17,104 full-time equivalent employees, including in joint ventures, and approximately 9,400 contractors working across 17 countries.**

Our contractors work in a variety of roles, including as product installers and drivers in our transport operations.

Full-time equivalent	FY2019	FY2018	FY2017
Boral employees	11,916	11,898	11,499 <sup>1</sup>
Boral contractors	~5,300	~5,200	~4,800
Joint venture employees <sup>2</sup>	5,188	5,233	4,976
Joint venture contractors <sup>2</sup>	~4,100	~3,500	~3,400

At end FY2019	Boral Group	Boral Australia <sup>3</sup>	USG Boral <sup>3</sup>	Boral North America <sup>4</sup>
Women at Boral	19%	13%	17%	25%
Average length of service (years)	8.0	8.9	9.3	6.5
Average age (years)	43.4	44.8	40.6	43.5
20+ years service	12%	12%	16%	9%
Employee turnover	23%	18%	9%	36%
Voluntary	16%	12%	6%	25%
Involuntary	7%	6%	3%	11%

Boral North America's employee turnover of 36% was up from 29% last year, reflecting a tight labour market in the USA as voluntary turnover increased to 25%, up from 19% in FY2018. However, total turnover was in line with the average for the manufacturing sector in the USA. Involuntary turnover of 11%, compared to 10% last year, was impacted by plant closures in the Meridian Brick and Stone businesses.

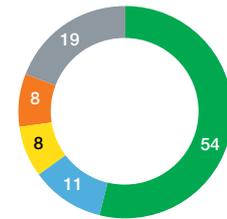
We have undertaken a number of initiatives to reduce employee turnover in the division. These include implementing direct hires, improving recruitment processes and practices, assessment and selection capabilities, and leadership development to strengthen frontline leader capabilities.

## DIVERSITY, INCLUSION AND EQUALITY

We value and actively promote workforce diversity. We respect and value the unique talents and contributions of each employee and aim to deliver gender pay equity.

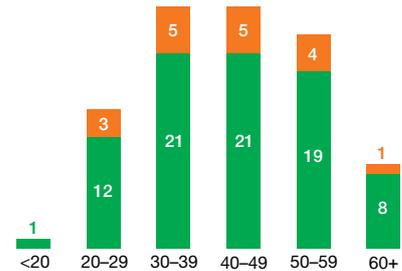
Our Diversity and Inclusion Plan, sponsored by Boral's Diversity and Inclusion Council, provides a robust framework that supports our commitment to a diverse and inclusive workplace and culture.

1. Includes 4,016 full-time equivalent employees from Headwaters and excludes employees from Boral Bricks in North America, who were included as joint venture employees.  
 2. Includes USG Boral, Meridian Brick and other small Australia-based joint ventures.  
 3. Excludes joint ventures.  
 4. Includes Meridian Brick joint venture.



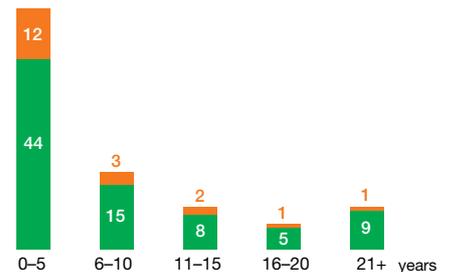
## EMPLOYEES BY OCCUPATION (%)

- Operators and drivers
- Technicians and trade
- Clerical and administrative
- Sales
- Other



## AGE PROFILE OF EMPLOYEES

- Male (%)
- Female (%)



## LENGTH OF SERVICE OF EMPLOYEES

- Male (%)
- Female (%)

Our framework focuses on six elements: leadership, communication and education, system and process design, gender equality and pay equity, generational diversity, and Indigenous relations.

In FY2019, we continued to focus on increasing the representation of women, particularly in leadership roles, and provided education and training on the impact of unconscious bias. Women represented 19% of our employees, compared to 18% the prior year.

WORK180, a global advocate for working women, endorsed us as an employer that proactively supports the increased representation of women.

Pay equity outcomes in Boral Australia continue to be favourable, with a female-to-male average base salary ratio<sup>1</sup> of 1:1.

Boral recognises the importance of having work environments that support employees' work and family responsibilities and, where practicable, the opportunity to access flexible work arrangements. To increase awareness and uptake of flexible work arrangements among employees, we rolled out our flexible work guidelines and online education module to support our flexible work policy.

Boral's 2019–2020 Reflect Reconciliation Action Plan extends and broadens our existing Indigenous Employment Program. Our Reconciliation Action Plan outlines planned actions to further support Aboriginal and Torres Strait Islander peoples through employment – including through long-term career pathways and training.

**WOMEN REPRESENT**



**43%**

of Directors

**25%**

of Executive Committee members<sup>2</sup>

**16%**

of management positions

**33%**

of professional positions

**24%**

of new hires



Boral Asphalt Williamstown team, Victoria

**ORGANISATIONAL CULTURE**

We have been monitoring the findings and recommendations of several inquiries into corporate governance and practices, including the Hayne Royal Commission, which released its report in February 2019.

While not directly involved in financial services, we recognise that there may be opportunities for companies like Boral to learn from past practices in other sectors, and to ensure our practices continue to meet internal and external expectations.

We have been strengthening opportunities to keep customers at the centre of what we do and to ensure our decision making is in the interests of our customers.

We already have strong cultural markers for safety and transparency. But we are also looking at how we can use our organisational culture to reinforce governance and accountability.

**EMPLOYEE ENGAGEMENT**

A motivated and engaged workforce, supported by a culture of safety, transparency and performance, are critical drivers of our business success.

We regularly measure employee engagement to better understand and track our employees' experiences. This provides insights to identify opportunities for improvement, enabling us to develop targeted strategies to enhance our employees' experiences.

Our three divisions use formal surveys to gather feedback on our employees' experience every few years.

In FY2019, USG Boral completed its third Aon Hewitt Employee Survey, involving 89% of the workforce across 14 countries. The engagement score of 65% was a nine-point improvement on 2017 and a 15-point improvement on the first survey completed in 2015. In FY2020, USG Boral will continue to focus on collaboration, learning and development, and empowerment to achieve its objective of being an Asia Pacific Best Employer.

Boral North America conducted a Safety Cultural Awareness Survey, which is informing improvement programs that focus on delivering the next evolution of Zero Harm Today. Information on the survey findings and focus areas for improvement is on page 31.

**EMPLOYEE WELLBEING**

Through our Boral Employee Assistance Program (BEAP), we provide our employees and their immediate families with free, confidential access to qualified psychologists, social workers and management coaches to help them manage issues and concerns that may be affecting their work and personal life.

1. Calculated as the average base cash salary for females as a proportion of the average base cash salary for males, as included in our confidential report to the Workplace Gender Equality Agency.  
 2. Calculation factors the Group HSE Director who ceased employment on 5 August 2019.

# Our people

(continued)

With a top quartile score of 72/100 in Boral Australia's 2018 employee satisfaction survey – using the McKinsey & Company Organizational Health Index<sup>1</sup> – the division continued to focus on the three areas identified for improvement: customer-centricity, innovation, and people development and recognition. It will roll out a three-year plan for leadership programs in FY2020. The plan will complement the division's broader strategic initiatives, focusing on enhancing customer-centricity and innovation.

## TRAINING AND DEVELOPMENT

We invest in training and developing our people to enable them to perform at their best, providing opportunities to build their skills, capabilities and knowledge. These range from job-related skills training to senior leadership development and coaching.

Our leadership programs, together with placements, coaching and mentoring, focus on developing capable and effective leaders. In FY2019, more than 680 employees undertook the zero|one|ten Leader program, with 29 completing the General Manager and Emerging Leader programs. The more than 900 frontline leaders who completed the zero|one|ten Leader program in recent years will build on their learning by participating in the Leading Safe Systems of Work program in FY2020.

In Australia, 1,330 employees completed Certificates II, III or IV, diploma qualifications, units of competency, and tailored learning solutions and training modules, in areas like chain of responsibility, sales and marketing, surface extraction, laboratory skills, driving operations, and work health and safety.

Our centralised training and compliance system, My Learning Space, provides standardised access to online training and monitors the ongoing training needs of more than 6,000 staff members across Boral Australia.

Brandon Hall Group, a leading independent research and analyst firm, awarded Boral a Gold medal for its use of the My Learning Space technology to monitor training and learning requirements.

Boral's Executive Committee, divisional leadership teams and other managers have continued to participate in a bespoke, multi-year development program designed to help our leaders to be more effective by being more self-aware and others-focused.

In FY2019, Boral North America started deploying Skilled4Action training modules to frontline leaders, providing hands-on training in management, leadership and lean principles.

## HUMAN RIGHTS AND MODERN SLAVERY

Boral is committed to respecting and promoting internationally recognised human rights in its global operations. This includes providing a workplace free from discrimination and harassment, and contributing to eliminating all forms of forced or compulsory labour, and the effective abolition of child labour.

We have revised our Human Rights and Labour Policy, with our supporting policy framework to be updated in FY2020.

An initial desktop assessment of the risk of modern slavery in our operations, including joint ventures, was completed during the year. While the risk of modern slavery in our operations was assessed as low, where we have identified areas of potential risk, we undertake robust employment checks as part of the commencement and onboarding processes for all new employees.

An internal training program on human rights and modern slavery for human resources managers and key leaders will be developed and launched in FY2020.

## WORKPLACE RELATIONS

We respect the rights of our employees to freedom of association and to be represented by trade unions, in line with local laws. We are committed to working honestly and transparently with labour unions and engaging in constructive negotiations to reach agreements on employment conditions.

We have 82 enterprise or industrial agreements covering approximately 3,400 employees in Australia, South Korea, Indonesia and Vietnam. These agreements on average cover a term of two to four years.

Our approach is to work collaboratively and cooperatively with our people and their representatives, and provide fair and equitable employment conditions that deliver sustainable performance.

We have accessible, fair and accountable grievance mechanisms in place. These include Boral's independent external whistleblowing service, FairCall, through which people can raise anonymous concerns. These measures enable our people to raise concerns without fear of recrimination.

## FUTURE OF WORK

Rapid changes and developments in automation, digitalisation and global demographics are transforming labour markets and the skills required for emerging jobs. These offer both significant opportunities and challenges.

In Boral Australia, we created a dedicated innovation facility called B/HUB to help us adapt and further develop the innovation capability of our people. At B/HUB, we consider conceptual ideas and work collaboratively with customers, and in partnership with startups, to test, validate and commercialise these ideas. Through our 'learn to fail fast' and accelerator programs, we have strengthened our problem-solving capabilities, allowing us to develop services for industry trends and new emerging markets.

1. Benchmarked against a global database of 1,500 companies.

# HSE management

## ZERO HARM TODAY

**Our overarching priority is Zero Harm Today, to people and the environment. We want our people, and those we interact with through our activities, to be safe today and every day. And we strive to eliminate any adverse environmental impacts of our operations, or where this is not possible, minimise harm.**

We are committed to maintaining a culture focused on Zero Harm Today, through strong leadership, management accountability, engagement and collaboration with our frontline people.

We engage and communicate with our frontline people on HSE matters in numerous ways. These include holding formal HSE training, daily pre-start meetings or shift hand-over meetings, more formal monthly HSE meetings at larger sites, Kaizen events for focus areas and improvement projects, and supervisors engaging with their teams on the job and through peer-to-peer observations.

Boral's CEO & Managing Director, the Group President Operations and divisional senior executives regularly spend time at our operations, which provides an opportunity to discuss safety and environmental management issues and challenges directly with site teams.

Our approach to HSE is underpinned by a robust strategy, systems, policies and processes, and a focus on continuing improvement.

Our people are responsible for abiding by our safety policies and standards. We take poor safety management or safety breaches very seriously.

In FY2019, 30 employees in Boral Australia and Boral North America were dismissed for poor safety management or breaches. Contractors and other service providers who breach Boral's safety policies or standards are also stood down.

## HSE STRATEGY

Our priorities and approach to managing HSE are guided by our four Group-wide strategic objectives and supporting programs.



Objective 1	Objective 2	Objective 3	Objective 4
<b>Capable and confident leaders</b>	<b>Engaged, empowered and competent workforce</b>	<b>Fit-for-purpose HSEQ systems and processes</b>	<b>Maintain our licence to operate and grow</b>
<b>Programs</b>			
<ul style="list-style-type: none"> <li>Leading Zero Harm Strategy</li> </ul>	<ul style="list-style-type: none"> <li>Operationalise HSE</li> <li>Fitness for work and life</li> <li>Contractor safety and engagement</li> </ul>	<ul style="list-style-type: none"> <li>Serious harm prevention</li> <li>Knowledge sharing</li> <li>Reporting and information</li> <li>Self-insurance</li> <li>Personal and property security</li> </ul>	<ul style="list-style-type: none"> <li>Healthy workplaces</li> <li>Driver safety</li> <li>Regulatory and stakeholder engagement</li> <li>Climate-related impacts adaptation and resilience</li> <li>Environmental compliance</li> </ul>

Each division is responsible for establishing and implementing their own HSE strategies and improvement plans, consistent with Boral's Group-wide HSE strategy.

In recent years, our HSE journey has been defined by applying a consistent strategy to deliver improved performance. We have focused on firmly establishing robust processes and improvement programs across the Group and engaging all our people, from business leaders through to frontline staff, to build a clear and shared understanding of our priorities and processes.

The continued improvement in Boral's HSE performance is testament to our people's commitment to consistently apply our systems and processes in practice.



# HSE management

(continued)

## HSEQ Management System

Boral's Group-wide Health, Safety, Environment and Quality Management System (HSEQ MS) provides the standards, guidelines and tools that enable us to improve performance. It establishes a robust governance framework, equips our businesses with standardised processes where appropriate, and affords operational teams flexibility on how they meet minimum requirements.

Our HSEQ MS incorporates a risk-based approach to supplier safety management. Any supplier who performs work on a Boral-controlled worksite is required to complete a formal Supplier Prequalification Program.

Oversight of the effectiveness and ongoing development of the system rests with the HSEQ MS Governance Council. The Council, comprising Group and divisional heads of HSEQ, meets quarterly to review and approve amendments to the system.

We engage with our workforce to drive continuous improvement in our HSEQ MS and ensure we use standards and tools that are practicable across our workplaces.

Our HSEQ MS enables us to certify operations to external standards. Certification is undertaken at sites where it is important to our customers and where it drives additional value beyond the equally high standards of our HSEQ MS. We have:

- ISO 9001 *Quality Management* certification at 365 sites in Boral Australia, 11 in USG Boral and four in Boral North America
- AS/NZS 4801 *Occupational health and safety management systems* certification at 38 locations in the Asphalt business, and

- ISO 14001 *Environmental management* certification at 26 Asphalt sites in NSW and Queensland, and six USG Boral sites.

## Managing risks

To achieve our Zero Harm goal, we must embed effective risk management in everything we do.

We focus on identifying and eliminating conditions and behaviours that have the potential to injure people or harm the environment. This requires carefully planning activities, thoroughly assessing risks, following effective systems and processes, and investing in equipment and other improvements.

During FY2019, we revised our Safe Systems of Work program and associated training. The revised program will help our people make better, safer decisions as they plan and undertake tasks in a dynamic workplace.

The program more clearly articulates when to implement certain processes, with a different approach for routine work, non-routine work or designated high-risk activities.

We review and assess HSE issues and risks as part of due diligence processes on all potential acquisitions and, commensurate with HSE risks, new or expansion projects.

Following any acquisition, our integration process includes aligning the business's HSE systems and processes to at least meet our minimum requirements.

## HSE incidents

For more serious HSE incidents, including near-miss events, we have a formal process to communicate, investigate and share safety learnings, with requirements tailored to the severity of the actual or potential consequence.

More serious HSE incidents are escalated to senior management, including the CEO & Managing Director. Incident review meetings are also held involving relevant divisional leaders, the Group President Operations, Group HSE Director and local line management.

Such events also require immediate notification to senior management, specialist investigators using the Incident Cause Analysis Method (ICAM) and the release of a HSE alert. The HSE alert notifies Boral sites of the incident, enabling them to consider if a similar risk exists at their site. This is typically undertaken through morning pre-start meetings.

After an investigation has been completed, HSE learnings that outline causal factors may also be shared with relevant sites.

Learnings that have broader organisational implications are discussed at cross-divisional meetings and, where appropriate, integrated into systems changes and training material.

Less serious HSE incidents are typically investigated locally and may be accompanied by a HSE alert.

## TRAINING OUR PEOPLE

Providing our workforce with standardised training that aligns with our HSEQ standards is a key part of achieving an effective safety-driven culture.

Training ranges from inductions for all new staff to safe work practices, internal leadership courses, training for frontline managers, supervisors and operators, and behavioural-based programs.

In Boral Australia, our centralised training and compliance system, My Learning Space, helps our people manage their own learning and competency requirements, and enables managers to monitor this as a leading safety measure.

### Our HSE policies include:

- **Work Health and Safety Policy**
- **Environment Policy**
- **Quality Policy**



# Health, safety and wellbeing



## SAFETY OUTCOMES

We are committed to achieving our Zero Harm safety goal, and encouraged by our continuing progress in reducing our injury rates. Each of our three divisions reported a marked improvement in recordable injury frequency rate (RIFR<sup>1,2</sup>).

By sticking to the programs and improvement initiatives we have established, we are confident we will achieve our goal.

Pleasingly, in FY2019, we had no fatalities among employees or contractors.

Our injury rates improved significantly, continuing our long-term improvement trend. Our RIFR of 7.5 is a 14% improvement on 8.7 reported in FY2018.

Our lost time injury frequency rate (LTIFR<sup>1</sup>) of 1.3 is a 19% improvement on 1.6 reported last year.

Boral Australia reported an RIFR of 10.5, a 7% improvement on 11.3 last year.

Boral North America's RIFR improved 15% to 7.6, down from 8.9 in FY2018, demonstrating our continued efforts to embed a Zero Harm Today culture across the Headwaters businesses. Safety integration efforts in these businesses are discussed on page 31.

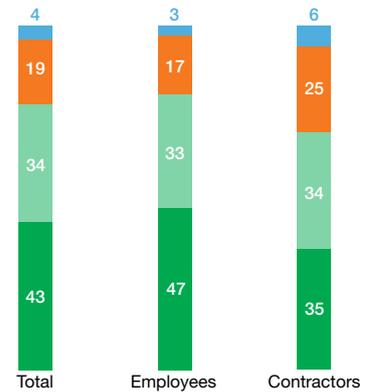
USG Boral's 24% improvement in RIFR to 3.4 from 4.5 last year (including all minority-owned joint ventures) demonstrates the benefit of targeted safety improvement programs and a maturing safety culture.

Percentage hours lost<sup>3</sup>, which monitors the severity of our more serious injuries by the total time lost, remained steady in FY2019 at 0.05%.

Hours away on restricted or transferred duties<sup>3</sup>, a more holistic measure of the effect of all recordable injuries, also remained steady at the relatively low level of 0.17%. This suggests that injuries remain generally less severe or respond well to treatment and return to work programs.

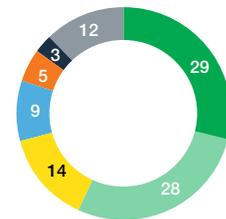
## INJURY ANALYSIS

Injury analysis assists in developing corrective action plans and training, and redesigning processes.



## INJURY TREATMENT<sup>4</sup> (%)

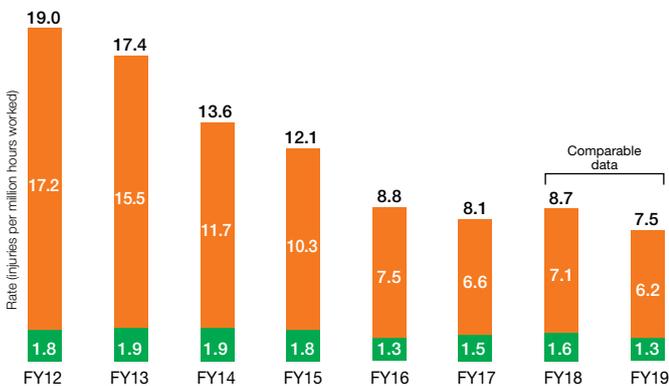
- No treatment
- First aid injury
- Medical treatment injury
- Lost-time injury



## MECHANISM OF INJURY<sup>4</sup> (%)

- Muscular stress
- Hit object with body part
- Fall on same level
- Hit by moving object
- Contact with substances
- Fall from height
- Other

1. Per million hours worked for employees and contractors in 100% owned businesses including Headwaters, and all joint ventures businesses regardless of equity interest from FY2018 onwards. Data for prior years only includes 50% owned joint ventures and excludes Headwaters.  
 2. RIFR is the combined LTIFR and medical treatment injury frequency rate.  
 3. Defined as a percentage of total hours affected against total hours worked – for employees only.  
 4. Boral Australia reported injuries in FY2019.



## BORAL GROUP RECORDABLE INJURY FREQUENCY RATE

- Lost time injury frequency rate
- Medical treatment injury frequency rate

# Health, safety and wellbeing

(continued)

## LEADING INDICATORS

We increasingly focus on capturing leading indicators of safety performance to monitor the efficacy of processes designed to prevent incidents.

While leading indicators tend to vary across our businesses, we monitor hazards, near-miss and regulatory intervention reporting at the Group level.

In FY2019, hazards reported increased 65% to more than 150,000, while near-misses reported increased by 88% to more than 30,000 compared to the prior year.

The significant increase in hazards and near-misses reported reflects the initiatives we have implemented to encourage staff to increase the quality and quantity of reporting. This includes user-friendly safety reporting apps that make it easy for our people to readily log a hazard or near-miss. High levels of reporting offer valuable learnings and enable us to make our workplaces safer.

During the year, we also commenced tracking priority training completion and Critical Control Gembas – these are inspections focused on verifying that controls around high-risk activities are in place and effective.

## CREATING A SAFER WORKPLACE THROUGH INNOVATION

We are developing innovative solutions to improve the safety of our workplaces and work practices.

Boral's new Forward Moving Aggregate Spreader (FMAS), a design led by Boral Asphalt's National Asset Manager, revolutionises how spray is applied when building sealed roads in Australia.

To improve safety and maximise visibility, the Boral FMAS disperses aggregate from the front of the truck, giving the operator a clear line of sight. This compares to the traditional process of spray sealing, which requires road crews to work with reversing trucks that apply aggregate through an elevated tipper body.

We are also improving pedestrian site safety through our smart CCTV technology, Angel-i. Developed through our B/HUB innovation facility, Angel-i integrates artificial intelligence with Boral's existing on-site security and safety camera systems.

Angel-i detects when a person enters a safety exclusion zone or comes within range of a moving vehicle, and sounds a real-time alarm.

We have achieved remarkable behavioural change at the trial work sites and are introducing the technology at other operating sites.



Boral Australia's new Forward Moving Aggregate Spreader

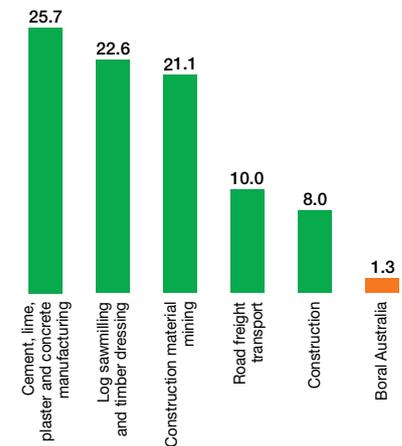
## OUTPERFORMING AUSTRALIAN INDUSTRY SAFETY BENCHMARKS

The broader industries in which Boral Australia operates experience extended duration lost-time injuries between six and 20 times more frequently than Boral's workers, based on Safe Work Australia's latest injury statistics reports.

Boral Australia's operations pour concrete and lay asphalt across major projects and construction sites; have around 70 quarries and more than 300 manufacturing operations producing cement, concrete, asphalt, bricks, roof tiles and timber products; and manage a fleet of more than 3,000 heavy vehicles.

Boral Australia's eLTIFR<sup>1</sup> (five or more days lost) was 1.3 in FY2019, which compares to industry averages ranging from 8.0 to 25.7 across construction; road freight transport; construction material mining; log sawmilling and timber dressing; and cement, lime, plaster and concrete product manufacturing.

BORAL AUSTRALIA'S eLTIFR<sup>1</sup> RELATIVE TO AUSTRALIAN INDUSTRY AVERAGES<sup>2</sup>



1. Extended duration LTIFR rate per million hours worked.

2. Statistics on workers in Australia published by Safe Work Australia, Table 2.1 – number, frequency rate and incidence rate of serious claims by industry (2011–12 to 2015–16). Based on Safe Work Australia's definition of LTIFR, which is based on workers' compensation claims for work-related injuries that resulted in five or more days of lost time from work.

## HEALTH AND WELLBEING

We provide a range of programs focused on the physical and mental wellbeing of our people, helping them be more effective at work and in their personal lives. These include occupational hygiene programs, health and fitness checks, drug and alcohol support, quit smoking programs, a confidential counselling service and health seminars.

Boral Australia has developed a Mental Health and Wellbeing strategy focused on preventative interventions, encompassing a range of initiatives.

In FY2019, we began rolling out the MindFit program. It equips frontline leaders with practical skills for identifying and supporting employees facing mental health challenges. Further initiatives will be progressively rolled out in FY2020.

Building on our pilot cigarette smoke-free site in our Quarries business, our Queensland Quarries business has become smoke-free, joining other sites across the Group that have adopted a smoke-free policy.

## IMPROVING FORKLIFT SAFETY IN USG BORAL

Forklifts are integral to USG Boral's 53 operating sites and 88 distribution sites in Australia, Asia and the Middle East. Forklifts also pose one of the highest safety risks in the business.

To significantly reduce the risk of pedestrian and forklift interaction, the team has developed an innovative approach using artificial intelligence (AI).

AI is being used to continuously monitor a three-metre pedestrian exclusion zone around a moving forklift, and to immediately alert drivers, pedestrians and site managers if the exclusion zone is breached. This means that an alert is triggered when a forklift is too close to a moving or stationary person, and when a collision between a forklift and a person is likely.

Data collected from the pilot system is being collated for trend analysis. This data is being shared across USG Boral's businesses and compared to data from Boral's Angel-i smart CCTV system, which is more focused on monitoring areas rather than mobile plants. Initially, the AI system is being rolled out at trade stores with higher traffic, but is intended to be used more broadly across the business.



## REDUCING HEAVY VEHICLE ROAD SAFETY RISKS

Boral Australia's logistics business manages a fleet of more than 3,000 heavy road vehicles that drive some 150 million kilometres a year. Reducing heavy vehicle road safety risks, including rollover risk, is therefore a high priority.

Since 2012, we have made considerable progress to reduce the risk of heavy vehicle rollovers through improved truck design and driver training. For example, we mandate that new company and contractor agitator trucks are fitted with electronic roll stability and that new tipper trucks are fitted with low-friction bin floor liners.

After reviewing our performance against world's best practices in FY2018 we established a comprehensive improvement program in FY2019. The program encompasses: driver onboarding, ongoing training, behavioural safety, developing formal minimum operating standards and improving vehicle standards.

## PROMOTING A SAFETY-FOCUSED CULTURE

The acquisition of Headwaters added over 4,000 employees, more than doubling the size of our USA workforce, and tripling our USA operating sites to 170. Improving Headwaters' safety performance has been a key focus of our integration activities.

Our efforts have focused on embedding a Zero Harm Today culture through proactive leadership, improvement programs, safety training and ongoing engagement with our frontline people. We also invested in safety upgrades, including machine guarding and improving traffic flow, facilities' lighting and processes across Headwaters' businesses.

A recent Safety Cultural Awareness Survey conducted by the Boral North America division had an impressive 80% response rate. The survey results revealed that the business has a mature safety culture that rates 74% above other comparable benchmark organisations and is working hard to embed a Zero Harm Today culture; and employees feel comfortable stopping work if they feel it is unsafe, and believe injuries are preventable.

The survey also highlighted several areas for further improvement, which will be a key focus in FY2020. These include continuing to standardise common tools and approaches, developing new leading indicators to drive behaviours and performance, and increasing face-to-face interactive training.

# Climate-related impacts

The global transition to a low-carbon economy and potential physical climate-related impacts present both challenges and opportunities. Our approach is to continue developing strategies that build our business portfolio's resilience to climate-related impacts while capturing opportunities.



**Boral recognises that climate-related physical risks and a global transition to a low-carbon future are expected to impact our operations, customers and suppliers.**

We support the Paris Agreement and mechanisms to achieve its objective of limiting future average global temperature rises to well below 2°C, as well as Australia's 2030 target of a 26–28% reduction in carbon emissions below 2005 levels.

Looking at how Boral's carbon emissions are tracking relative to 2005 levels, in Australia we have reduced emissions by around 40% since FY2005. We achieved about half of this decrease largely by realigning our portfolio away from emissions-intensive businesses. The remainder of the decrease is due to reducing clinker manufacturing in Australia in favour of importing it from more efficient and larger scale operations in Asia.<sup>2</sup> Including Boral North America, our Scope 1 and 2 emissions decreased by 43% since FY2005.

We continue to progressively adopt the recommendations of the TCFD. In FY2019, we enhanced our climate-related governance and risk management, completed scenario analysis of Boral Cement's business and continued to strengthen our resilience to a 2°C scenario. We also broadened our reporting of physical climate-related risks and Scope 3 emissions.<sup>1</sup>

We completed a Group-wide review of our climate-related risks and opportunities using the TCFD framework. This review informed a two-year roadmap to undertake further scenario analysis of key climate-related business risks.

We transparently and constructively engaged with Climate Action 100+ investor representatives and other stakeholders during the year, sharing our progress in aligning our efforts with the TCFD recommendations and building greater resilience to climate-related impacts.

ABSOLUTE GHG EMISSIONS  
SCOPE 1 AND 2<sup>1</sup>

2.4m

tonnes CO<sub>2</sub>-e

↓7%

in FY2019

↓32%

since FY2012

GHG EMISSIONS INTENSITY  
SCOPE 1 AND 2

348

tonnes CO<sub>2</sub>-e/\$m revenue

↓7%

in FY2019

↓48%

since FY2012



Fly ash reclaim operation at Montour, Pennsylvania

## Strategy

**Our strategy is to strengthen our resilience to climate-related impacts by further reducing our operational emissions intensity; creating innovative solutions and products that support a lower carbon future; and mitigating our climate-related risks. Through our Boral North America Fly Ash business, we also aim to increase our contribution to reducing carbon emissions in the production of ready mix concrete, by making more fly ash available as a cement substitute.**

In FY2018, Boral set three climate-related goals that reflect our strategic ambitions. Our performance against these goals and targets is outlined on pages 38–39.

As a global manufacturer of construction materials and building products, we are a large emitter of greenhouse gas (GHG), particularly through our clinker manufacturing operations in Australia. Our Cement business accounted for nearly 60% of our total 2.4 million tonnes of GHG emissions in FY2019. Our brick businesses in Western Australia and the USA together accounted for a further 9% of our GHG emissions.

Since FY2012, we have reduced our Scope 1 and 2 emissions from our operations by 32% and our emissions intensity by 48%, including a 7% reduction in emissions intensity in FY2019.

We achieved this by realigning our portfolio towards lighter weight products and less carbon-intensive businesses, reducing clinker manufacturing in Australia in favour of importing clinker, and investing in energy efficiency and low-carbon fuels programs.

Repositioning the business has reduced our risks associated with transitioning to a lower carbon economy and cut our exposure to energy costs. In FY2019, Boral's energy and fuel costs totalled \$353 million, accounting for 6% of our cost base.

We are confident we will continue to reduce our emissions intensity going forward. We do not intend to invest in new cement or brick kilns, and these manufacturing operations are unlikely to be in Boral's portfolio in the long term. In fact, in August 2019, we announced that we are divesting our Western Australia Midland Brick business, which will help bring down our GHG emissions by around 60,000 tonnes per year. We cannot put targeted dates on the life of remaining kiln-based operations, as this will be determined by economic drivers.

Clinker manufacturing is highly emissions-intensive, so we continue to develop ways to reduce carbon emissions from our Cement business and bolster its resilience to climate-related transition risks.

We completed scenario analysis to get a better understanding of the potential transition risks and opportunities facing our clinker manufacturing operations, which we had begun in FY2018. The scenario analysis methodology, key assumptions, levers and implications for the business are detailed on pages 40–41.

Boral Cement's climate-related strategic priorities, including our roadmap to reduce Scope 1 and 2 emissions by around 20%, are detailed on pages 41–42.

More broadly across the Group, we continue to focus on energy efficiency improvements, and using recycled materials to reduce our carbon emissions.

We continue to grow the revenue contribution of our lower carbon and high-recycled-content businesses and products.<sup>3</sup> These include our Boral North America Fly Ash and TruExterior® Siding & Trim businesses, and in Boral Australia, our Recycling business and lower carbon concretes such as ENVISIA®, Envirocrete® and Aspire®.

USG Boral is also continuing to progress plant trials and product development of USG-developed Sheetrock® EcoSmart Panels to suit the Australian market. EcoSmart Panels are produced using less water than other boards. This means less energy is used to dry the product, reducing carbon emissions by 20% during manufacturing.



### CEMENT CARBON EMISSIONS

Clinker is the main ingredient in cement, which is used to make concrete.

Manufacturing clinker requires the decomposition of limestone, which typically accounts for about two-thirds of the total carbon emissions generated in cement production.<sup>4</sup>

Most of the remaining carbon emissions are generated by heating the clinker kiln using standard fuels such as coal and electricity for the raw feed milling and kiln operation, and to a lesser extent, diesel for on-site plant and equipment.

Grinding of clinker and other mineral additives typically only accounts for around 5% of GHG emissions in cement manufacturing.

1 See page 53 for definitions of Scope 1, 2 and 3 emissions.

2 Following the closure of Boral's clinker manufacturing plant at Warrnambool, Victoria in 2013, we have imported clinker from Asia. The emissions intensity of our Warrnambool clinker manufacturing operations in FY2013 was 0.98 tonnes CO<sub>2</sub>-e per tonne of production. The emissions intensity of our imported clinker, included as Scope 3 emissions, is 0.95 tonnes CO<sub>2</sub>-e per tonne of production, including shipping to the Port of Geelong (a 3% reduction in emissions).

3 Defined as having a minimum of 40% recycled content.

4 *Technology Roadmap* report by IEA and World Business Council on Sustainable Development Cement Sustainability Initiative, March 2018.

# Climate-related impacts

(continued)

## Climate-related risks and opportunities review

As part of our planning and risk management efforts during the year, we undertook a targeted review of our climate-related risks and opportunities across the Group, using the recommended framework set out by the TCFD. The work updated and revised the climate-related review we completed previously in FY2017.

Group HSE managed and coordinated the review, with assistance from Group Risk and an external consultant. The review incorporated input from functional managers and senior representatives of Boral's three divisions, obtained through a series of workshops and one-on-one interviews.

The review assessed and prioritised potentially significant physical and transition climate-related risks and opportunities, based on high-level climate scenarios. A summary of these is included on pages 35–37.

## TCFD-based scenario analysis roadmap

Based on the outcomes of our climate-related risks and opportunities review, we established a two-year roadmap to further assess our most significant risks using comprehensive TCFD-based scenario analysis.

The planned scenario analysis will enable us to test the potentially significant business risks identified under different climate-related and regulatory scenarios. The findings from this work will inform our business strategies and actions, and be incorporated into Group-level climate-related financial risk modelling.

<b>Work done</b>	✓ <b>Clinker</b> manufacturing transition risks	 <p>Findings integrated into strategic plans and Group level climate-related financial risk modelling</p>
<b>FY2020–21 work plan</b>	<ul style="list-style-type: none"> <li>• <b>Physical climate-related risks</b> in key geographies</li> <li>• <b>Carbon pricing risks</b> across Boral's supply chain</li> <li>• Availability and supply of <b>synthetic FGD<sup>1</sup> gypsum</b> in USG Boral<sup>2</sup></li> <li>• Supply chain impacts on <b>Boral North America Fly Ash</b> from potential decline in coal-fired electricity generation</li> </ul>	



**Boral North America, sourcing fly ash from a utility, Georgia**

## LEVERAGING OUR FLY ASH BUSINESS TO REDUCE CARBON EMISSIONS

Fly ash is a residue generated by coal-fired power stations. As a substitute cementitious material used in manufacturing concrete, fly ash has multiple benefits. It enhances the impermeability, durability and workability of concrete, is typically cheaper than cement, and mitigates carbon emissions associated with cement production.

In FY2019, we sold 7 million tons (6.3 million tonnes) of fly ash. The replacement factor of Portland cement with fly ash in ready mix concrete generally varies between 1:1 and 2:3, depending on the properties of the ash and the desired performance of the concrete.

On the basis that 1 tonne of cement produced results in about 1 tonne of carbon emissions, for every 1 million tonnes of fly ash we can bring to market, replacing Portland cement with fly ash would avoid 0.67–1 million tonnes of CO<sub>2</sub>-e being emitted.

Fly ash substitution of Portland cement in concrete is currently around 16% in the USA, but up to about 50% in European markets. This means there is considerable opportunity for higher substitution rates if we can increase fly ash supply.

Our strategy is to increase the amount of fly ash we bring to market by reducing the amount of ash that would otherwise go to landfill and by reclaiming ash that is currently in landfill across the USA – an amount estimated to exceed 1 billion tons<sup>3</sup>.

Initiatives underway to increase our supply of fly ash include optimising our distribution network; increasing use of beneficiation technologies and new ash storage facilities to reduce ash going to landfill; reclaiming landfilled ash; expanding into pozzolans and importing excess fly ash from countries where it is abundant. We are aiming to increase available fly ash for sale by 1.5–2 million tons per year by FY2022.

1. Flue gas desulfurisation.  
 2. FGD scenario analysis is subject to outcomes of strategic ownership changes of USG Boral.  
 3. Sources: American Coal Ash Association estimates around 1 billion tons of fly ash is currently in landfill. The United States Environmental Protection Agency estimates that around 1.5 billion tons of total coal ash has been landfilled or impounded.

## Governance

**Our approach to sustainability governance, including climate-related impacts, is outlined on page 21.**

This year, we established a Group Environmental Sustainability Governance Steering Group that will be responsible for coordinating and reviewing climate-related risks, strategy and reporting. The group, chaired by Boral's Group President Operations, comprises senior functional leaders including from Group HSE, Group Risk and Investor Relations.

The group will oversee the implementation of Boral's climate-related scenario analysis roadmap, and review and endorse assurance activities, including recommendations to Boral's Executive Committee and the Board.

The group reviews the climate-related information in this Sustainability Report, including performance against our targets and goals, as do the CEO & Managing Director, the Board HSE Committee and the full Board. The Board also reviews performance against divisional strategic objectives and business plans. These include initiatives to develop and drive market expansion of lower carbon products, and to reduce costs and operational emissions through energy efficiency and low-carbon fuels programs.

We have had our performance against quantitative climate-related goals and targets – and our reported energy and carbon emissions data – independently assured. For more details, see EY's limited assurance statement on page 52.

## Risk management

**Climate-related risks are incorporated into Boral's enterprise risk management (ERM) framework and processes, which identify, assess, monitor and report on our organisation's risks.**

Managed by Group Risk, these processes include business-specific, bottom-up risk assessments, as well as top-down reviews. The Group Risk team works with business leaders and functional managers to ensure risks are adequately considered through Boral's ERM process.

Group Risk reports to the Board Audit & Risk Committee at least annually on Boral's organisation-wide risks.



Based on our existing categorisation of climate-related risks, we determine their relative significance using the same established methodology as for other risks. We review and revise these categorisations regularly, based on emerging issues. Climate-related risks are now also incorporated as a standalone category of risk in our ERM framework.

Boral's risk-scoring methodology assesses risks based on consequence and likelihood of occurrence, to identify the severity of the risk. The consequence is rated according to a number of factors including potential financial impact.

Divisional chief executives are responsible for managing identified risks and implementing mitigation action plans, and may delegate this responsibility to line managers.

A summary of our key risks and responses, including climate-related risks, is included on pages 16–17.

## Risks and opportunities

### PHYSICAL RISKS

Boral's key businesses and regions most at risk of potential climate-related acute physical risks include:

- our key quarries across eastern and southern Australia, and our Cement business operations
- Boral North America's southern USA region, from which the division derives nearly 50% of its revenue, and
- low lying coastal areas or river deltas in our USG Boral Asia operations.

Across our global operations, we consider flood and storm deluge risk to be a key physical risk. Over the last several years, we have reviewed stormwater infrastructure at potentially high risk sites and commenced investing in upgrading stormwater infrastructure at sites considered most at risk. Although this work is ongoing, outputs from this process have included:

- installing additional pumping equipment at quarries to improve our recovery response to high rainfall events
- installing backup power generators in case storms interrupt power supplies, and
- developing tailored emergency response plans.

In FY2019, we assessed the risks associated with extreme weather, including rainfall deluge, at sites that have some form of impoundment wall, such as a constructed dam wall. See page 45 for details.

From a Group perspective, our geographically diverse operating footprint is a key mitigating factor against the risk to earnings posed by climate-related weather events, as these typically tend to be geographically concentrated.

# Climate-related impacts

(continued)

**PHYSICAL RISKS – MEDIUM AND LONG TERM**

Acute and chronic physical risks will be considered in our planned scenario analysis.

Potentially significant risk	Key mitigation measures
<p><b>Acute risks</b> – increased severity and frequency of extreme weather such as cyclones, severe precipitation causing floods or deluge, and bushfire events</p> <p><b>Property damage</b> to key Boral operations, key suppliers and/or key customers may result in business interruption and repairs to Boral operations. Property damage to key suppliers may result in temporary supply interruption for key raw materials and/or significant cost increases</p> <p><b>Environmental damage</b> may result in fines, penalties and/or damage to Boral property and/or community, including waterways</p> <p><b>Disruption to logistics or supply chain across our network</b> may impact our ability to supply our customers and have raw materials delivered from impacted regions</p>	<ul style="list-style-type: none"> <li>Impact of physical damage to our buildings, plant, equipment and stock, and resulting lost profit, is mitigated through Boral's risk management which includes working with our group insurers – this involves considering and implementing improvements such as business contingency plans</li> <li>Raw material supply continuity plans in place at key sites</li> <li>Environmental management system helps to identify and mitigate site-specific environmental risks via internal self-assessments and audits</li> <li>Investment in stormwater infrastructure</li> <li>Geographically diverse operating network delivers flexibility across a number of our businesses</li> <li>Group Procurement considers supply risk and identifies alternative supply options for key raw materials</li> </ul>
<p><b>Chronic risks</b> – shifts in climate, including precipitation patterns, unseasonal weather variability, rising mean temperatures and rising sea levels</p> <p><b>Constrained water supply due to prolonged drought</b> may result in increased water costs and potential decline in product demand from customers due to higher prices</p> <p><b>An increase in the number of rain-impacted days</b> may significantly affect our customers' operations and in turn demand in Boral Australia's Concrete and Asphalt businesses, and our Fly Ash business in the USA, in particular increasing costs through operational inefficiencies</p> <p><b>An increased number of hot days</b> could lead to decreased productivity and higher energy costs, and possible reductions in revenue</p>	<ul style="list-style-type: none"> <li>Increased use of recycled water and on-site water storage over past decade</li> <li>Establishing Group-wide water efficiency and re-use targets in geographies with potential water stress</li> <li>USG Boral Sheetrock® EcoSmart Panels, currently being developed to suit Australian market, require 25% less water in manufacturing than other boards</li> <li>Project underway to develop strategies that increase business resilience in event of adverse weather</li> </ul>

<p>Given that the typical expected life of our operations extends more than 20 years, we define short-, medium- and long-term climate-related risks as follows.</p>	<p><b>Short-term risks</b></p>	<p><b>0–10 years</b></p>
	<p><b>Medium-term risks</b></p>	<p><b>10–20 years</b></p>
	<p><b>Long-term risks</b></p>	<p><b>20+ years</b></p>

## TRANSITION RISKS – SHORT TERM AND ONGOING

The following transition risks will be considered in our planned scenario analysis and/or have been considered in Boral Cement's clinker transition risk scenario analysis completed in FY2019.

Potentially significant risk	Key mitigation measures
<b>Carbon policy</b> changes and potential introduction of regulatory pricing mechanisms and/or trading systems may impact cost of non-renewable energy	
<b>Boral Cement</b> – there may be lower demand for clinker at a higher cost due to exposure to a potential carbon price	<ul style="list-style-type: none"><li>• See pages 40–41</li></ul>
<b>Boral North America</b> – there may be decreased supply and/or a higher cost of fly ash due to decline in coal-fired power generation	<ul style="list-style-type: none"><li>• Comprehensive growth plans to expand supply – see page 34</li></ul>
<b>USG Boral</b> – there may be decreased supply of synthetic gypsum and/or a higher cost due to decline in coal-fired power generation in Asia	<ul style="list-style-type: none"><li>• Investing in network flexibility and strengthening contracts with suppliers, and identifying network of alternative suppliers of raw materials, including natural gypsum</li></ul>
<b>Energy policy</b> changes may increase costs due to changes in supplied energy mix (such as more renewables), resulting in higher cost of raw materials, either domestic or imported	<ul style="list-style-type: none"><li>• Investing in lower carbon fuels and energy efficiency initiatives</li><li>• Actively monitoring policy and regulatory developments</li></ul>
<b>Disruptive technology</b> may affect our competitiveness, either through reduced demand or supply-side cost impacts	<ul style="list-style-type: none"><li>• Continue to invest in developing innovative lower carbon building products and construction materials – see pages 33 and 42</li></ul>
<b>Building and construction industry standards</b> changes may result in decreased demand for higher carbon products	<ul style="list-style-type: none"><li>• Risk considered as part of clinker scenario analysis – see page 40</li><li>• Continue to invest in innovative lower carbon building products and construction materials</li></ul>

## OPPORTUNITIES

### Increased building and construction rectification and remediation work

- More frequent extreme events may result in higher demand for rectification and remediation work. For example, Boral North America Roofing business benefited from increased re-roof activity in Florida following Hurricane Irma in September 2017

### Increasing demand for more resilient infrastructure and buildings

- In Australia, Boral's advanced lower carbon concrete range provides long-term strength and durability benefits that outperform conventional concrete
- In Boral North America, our concrete and clay tile roofing products offer greater resistance to extreme weather conditions than many other roofing materials

### Capturing growth from changes in construction industry standards

- Building our capacity to develop and market more sustainable building products and construction materials
- Queensland Department of Transport and Main Roads recently approved our high durability, lower carbon ENVISIA® concrete for use in any Queensland infrastructure project
- Our US Fly Ash business is well positioned to benefit from increasing substitution of cement in concrete production

### Reduced energy costs from improved energy efficiency

- Investment in low-carbon solid waste-derived fuels facility at Berrima is decreasing our energy costs and carbon footprint
- Continuing to explore opportunities to improve energy efficiency of operations, including investigating further low-carbon fuels programs in our Cement business
- Boral Timber is progressing development of a project to convert timber sawmill residues into renewable diesel and bitumen – see page 39

# Climate-related impacts

(continued)

**OUR GOALS AND TARGETS**

Further reduce **emissions intensity** by **10–20%** on **FY2018 by FY2023**<sup>1,2</sup>

Deliver annual growth in share of revenue from lower carbon and high-recycled-content products from **9%**<sup>3</sup>

Reduce **1.1–1.5 million tonnes CO<sub>2</sub>-e in supply chain** on FY2018 through increased fly ash supply by FY2022

**FY2019**

↓7%

↑to 10%

↑0.1 million tonnes CO<sub>2</sub>-e

**GHG EMISSIONS**  
tonnes CO<sub>2</sub>-e

↓7% to **2.4m**

**Scope 1 and 2**

**3.0m**

**Scope 3**

## Metrics and targets

Our FY2023 emissions-intensity reduction target of 10–20% on FY2018 does not capture the potential exit of non-core brick operations, or other possible divestments or acquisitions. It reflects higher expected growth in our less energy- and emissions-intensive businesses, and the benefit of our low-carbon fuels program at Berrima.

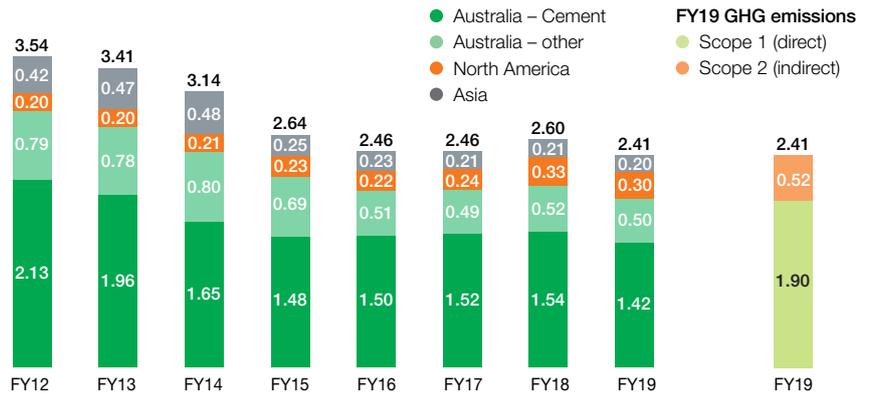
During FY2019, we sold our Denver Construction Materials and Block businesses in the USA. In August 2019, we announced the sale of our remaining Australian brick business, Midland Brick, and an agreement to acquire Knauf’s 50% stake in USG Boral Australia and New Zealand, and form an expanded USG Boral Asia joint venture with Knauf. These business portfolio changes are expected to impact our reported emissions intensity from FY2020, so we intend to review our emissions-intensity reduction target in FY2020.

## Greenhouse gas emissions from operations

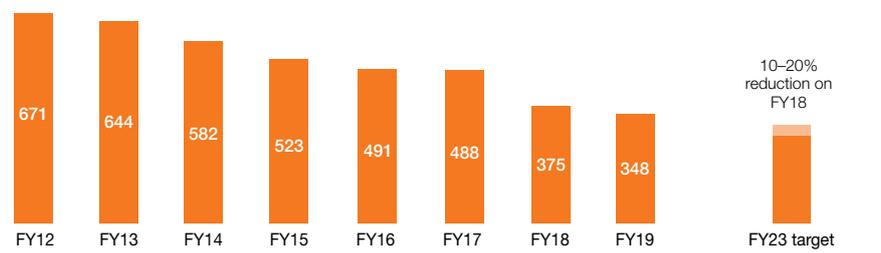
Our Scope 1 and 2 emissions decreased by 7% to 2.4 million tonnes compared to the prior year.<sup>1</sup> The decline largely reflected lower clinker production, the benefit of the low-carbon fuels program at Berrima, and the divestment of the Denver Construction Materials and Block businesses in the USA.

Boral’s GHG emissions intensity decreased by 7% to 348 tonnes of CO<sub>2</sub>-e per A\$ million of revenue, down from 375 tonnes in FY2018, reflecting lower absolute emissions and steady underlying Group revenue.<sup>1,2</sup> Excluding the divestment of our businesses in the USA in FY2019, our emissions intensity decreased by 9% compared to the prior year.<sup>5</sup>

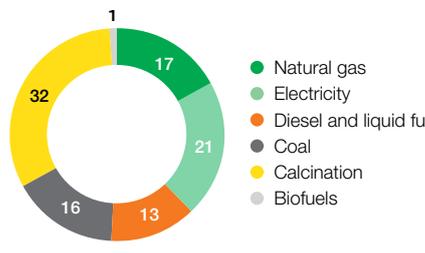
Our lower carbon and high-recycled-content products and businesses accounted for 10% of Group revenue in FY2019, up from 9% in FY2018. See page 33 for a description of these.



GHG EMISSIONS FROM OPERATIONS<sup>1,4</sup> (million tonnes CO<sub>2</sub>-e)



GHG EMISSIONS INTENSITY FROM OPERATIONS<sup>1,2</sup> (tonnes CO<sub>2</sub>-e per A\$m revenue)



GHG EMISSIONS BY FUEL SOURCE<sup>1</sup> (%)

### Scope 3 emissions

This year, we expanded data collection and reporting for our Scope 3 emissions. We considered each of the 15 categories of Scope 3 emissions as defined in the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard. With the aim of identifying and reporting on more than 95% of Boral's indirect emissions, each of our three divisions reviewed potential sources of Scope 3 emissions likely to account for more than 50,000 tonnes of CO<sub>2</sub>-e of emissions per year across these categories.

On this basis, we identified 3.0 million tonnes of Scope 3 emissions in FY2019. Of these emissions, 90% related to purchased raw materials, and the remaining 10% related to the upstream emissions associated with our energy and fuel purchases, and downstream emissions associated with contractor haulage. Boral Australia's clinker imports and domestic cement purchased, together with Boral North America's cement purchased for use in the Stone and Roofing businesses accounted for 55% of our Scope 3 emissions.

Going forward, we will continue to refine and improve our Scope 3 reporting and methodologies.

### Avoided emissions

GHG emissions avoided through the sale of fly ash in the USA were modestly lower at 5.1 million tonnes<sup>6</sup>, down from 5.2 million tonnes in FY2018. We are targeting a reduction of 1.1–1.5 million tonnes carbon emissions in the supply chain on FY2018 by FY2022 through increasing annual supply of fly ash by 1.5–2.0 million tons.

Further data on Boral's GHG emissions, including Scope 3 emissions by division, energy consumption and other emissions is available on our website. [↗](#)

1. GHG emissions and energy consumption data excludes some joint ventures, which in aggregate are not deemed to have material emissions.
2. Group-reported revenue adjusted to include a 50% share of underlying revenue from the USG Boral and Meridian Brick joint ventures, which are equity accounted.
3. Based on Group-reported revenue – this excludes underlying revenue from joint ventures which are equity accounted.
4. Data may not add due to rounding.
5. Assumes FY2018 emissions and revenue for businesses divested in FY2019.
6. We have used a conservative conversion factor to estimate CO<sub>2</sub>-e emissions displaced as a result of fly ash substitution for cement in ready mix concrete, assuming that for every tonne of fly ash approximately 0.8 tonne of CO<sub>2</sub>-e is displaced. This conversion rate accounts for varying qualities of fly ash, and so assumes a substitution rate of 1.25 tonnes of fly ash per tonne of cement in ready mix concrete, and assumes 1 tonne of cement produced results in 1 tonne of carbon emissions. We will review our methodology for calculating avoided emissions in FY2020.

### ENERGY CONSUMPTION AND COSTS FY2019



### ENERGY

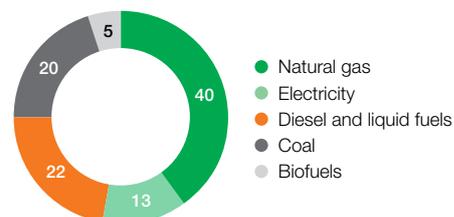
We aim to implement strategies to reduce our energy costs as well as our carbon footprint. This means we are investing in opportunities that improve our energy efficiency or decrease our energy costs while abating carbon emissions, where it makes economic sense to do so.

For example, the new low-carbon solid waste-derived fuels program at Berrima reduced our consumption of coal by 16,000 tonnes in FY2019, and we expect to replace more than 40,000 tonnes of coal in FY2020. Our Boral Timber business is also progressing the development of a project to convert sawmill residues into renewable diesel and bitumen.

In FY2019, our operations consumed 20.6 petajoules (PJ) of energy, down 4% on the prior year. This decline largely reflects lower clinker production at Berrima and the sale of the Denver Construction Materials and Block businesses in the USA.

The low-carbon fuels program at Berrima increased the contribution of biofuels in our energy mix to 5%, up from 2% last year.

Expenditure on energy was A\$353 million in FY2019, down 7% compared to FY2018.



ENERGY BY FUEL SOURCE<sup>1</sup> (%)



### TIMBER RESIDUE BY-PRODUCTS AS BIOFUEL

Boral Timber recently completed a feasibility study investigating the conversion of up to 50,000 tonnes per annum of sawmill residues from our Herons Creek mill into renewable diesel and bitumen. The study found that the project, which could supply up to 15% of Boral's annual diesel and bitumen needs, was technically and financially viable.

The \$1.2 million study, co-funded by the Australian Renewable Energy Agency (ARENA), included pilot plant trials using world-first technology developed by a Spanish company, Global Ecofuel Solutions S.L. The proof of concept identified the renewable diesel had less than 25% of the carbon emissions intensity of fossil-derived diesel.

# Climate-related impacts

(continued)

## Boral Cement scenario analysis

In FY2019, we completed the climate-related scenario analysis we commenced in FY2018, assessing the implications for Boral's Cement business of transitioning to a lower carbon economy.

We initially focused on our Cement business as it is our most emissions-intensive, and more likely to be impacted by domestic and global policy changes. Boral Cement also underpins a significant proportion of our revenues – Boral Cement and downstream businesses account for around one-quarter of Boral's revenue.

Our scenario analysis work tested the resilience of our clinker operations by modelling three different future climate transition scenarios out to 2030.

The three scenarios we considered were a Reference Case (a 3–4°C economy), which incorporates a modest future policy transition, a Globally Aligned scenario, and a Regionally Differentiated scenario. The Globally Aligned and Regionally Differentiated scenarios aligned with the Paris Agreement 2°C climate goal, and leveraged existing projections from the International Energy Agency (IEA).

The scenario analysis work provided a formalised approach to assess the impact of different policy and carbon pricing levers on:

- the demand and supply profiles for clinker and substitute cementitious materials (SCMs) out to 2030
- the cost to manufacture and import clinker, and implications for configuring the proportion of clinker manufactured and imported, and
- potential future capital investment requirements.

The carbon prices used in the scenarios were based on the Climate Change Authority's 2013 *Climate Change Mitigation Report*. The low and high price ranges used in the scenarios align with the medium level of global action and ambitious global action scenarios in that report.

The scenarios drew on historical relationship assumptions and future expectations focused around four key influencing levers.

**KEY LEVERS**

**Carbon policy**

- Carbon price and level of local assistance to emissions-intensive sectors in Australia and regionally
- Emissions abatement technology

**Energy policy and energy efficiency**

- Energy price in Australia and regionally
- Use of low-carbon fuels
- Energy efficiency of kilns

**Construction policy and industry standards on construction materials efficiency**

- Market demand for concrete
- Clinker-to-cement ratio
- Availability of SCMs

**Environmental policies**

- Kiln closures in Australia and regionally

The key assumptions and outcomes under each scenario are outlined below.

	Reference Case (3–4°C economy)	Globally Aligned (2°C economy)	Regionally Differentiated (2°C economy)
<b>Assumptions</b>			
<b>Description</b>	Minor future policy transition	Ambitious policy action to achieve climate target both in Australia and regionally	Policy divergence with strong regional policy action and more gradual action in Australia
<b>2030 carbon price</b> (A\$/tonne CO <sub>2</sub> -e)	\$60	~\$150	\$60 in Australia ~\$150 regionally
<b>Coal-fired plants decommissioned</b>	By 2050	By 2035	By 2050
<b>Lower carbon construction materials and design</b>			
Industry standards	Unclear pathway	Strong advancements	Modest market acceptance despite changes in standards
Uptake of high blend and alternative cement	Limited	Significant increase	Modest increase
Timber as a concrete alternative	Limited	Modest increase	Modest increase
More concrete-efficient building design	No developments	Significant developments	Limited developments

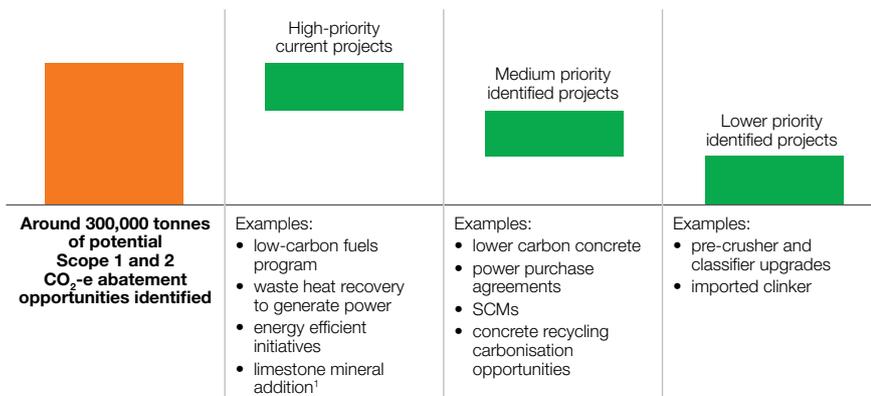
	Reference Case (3–4°C economy)	Globally Aligned (2°C economy)	Regionally Differentiated (2°C economy)
<b>Outcomes</b>			
<b>Clinker demand</b>	Continued growth to 2030	Marked decline by 2030	Gradual and moderate decline by 2030
<b>Demand and supply profiles for SCMs</b>	Slight increase in demand	Significant increase in demand and potential supply constraints	Moderate increase in demand
<b>Cost to manufacture and import clinker</b>	While this information is commercially sensitive, the different scenarios have implications for configuring the proportion of clinker manufactured and imported		
<b>Capital investment</b>	Considerations include capital investment for storage of fly ash and slag, and highly substituted blended cements		

The scenario analysis outcomes have provided greater insight into decision triggers and potential challenges and opportunities for the Cement business. This has informed strategic decision making and increased our efforts to leverage future opportunities and build our resilience in a potentially rapidly decarbonising economy, including a potential marked replacement of clinker with SCMs.

### BORAL CEMENT STRATEGIC PRIORITIES

Our climate-related strategic priorities for Boral Cement are focused on reducing our operational emissions and optimising operational flexibility.

Boral Cement's revised 2019 carbon abatement plan identifies potential projects and opportunities to reduce Scope 1 and 2 emissions by about 20%, equivalent to about 300,000 tonnes CO<sub>2</sub>-e.



Some of these opportunities depend on carbon pricing, capital investment and future lower cost alternatives. We are currently investing in projects assessed as high priority based on our initial assessment of their feasibility at a nil carbon price.

1. Realisation contingent on change to cement standard.

### Low-carbon fuels program

Our new low-carbon solid waste-derived fuels (SWDFs) facility at Berrima, commissioned in FY2018, reduced our coal-related carbon emissions by about 30,000 tonnes in FY2019.

Over the coming year, we are aiming to progressively increase our use of SWDFs, which should decrease our coal-related carbon emissions by a further 50,000 tonnes per year.

SWDFs used include wood residues – such as untreated sawdust, pallets, bark chips and mill off-cuts – and refuse-derived fuels sourced from commercial waste such as paper, cardboard and packaging.

We are investigating further low-carbon fuels programs in our Cement business.

### Waste heat recovery

The recovery of waste heat at Berrima is another high priority project we are investigating.

When clinker is produced, the calcination process consumes a significant amount of heat energy. A large amount of this heat is wasted when it is released rather than used. Waste heat recovery transfers this heat to a 'working fluid' – for example, water or an organic liquid – which drives a turbine to produce power.

### Energy efficiency initiatives

Boral Cement has implemented a number of energy efficiency opportunities, including compressor optimisation, LED lighting initiatives and process optimisation. Further opportunities we are investigating include improvements to process dust collector efficiencies and optimising cement grinding.

# Climate-related impacts

(continued)

## Limestone mineral addition

Boral is working towards maximising limestone mineral addition in cements without detrimental effects to cement or concrete performance. Inter-grinding limestone and clinker reduces the clinker content of cement, saves energy and produces cement with lower embodied GHG emissions.

## Lower carbon concrete

As a leader in developing innovative concrete solutions in the Australian market, we are working with design engineers and our customers to increase the adoption of our innovative lower carbon concrete products.

Our high durability, lower carbon ENVISIA® concrete achieves a Portland cement reduction of up to 65% using the Green Star MAT-4 method, without the traditional trade-offs in concrete performance. And our newly developed Aspire® concrete, specifically developed to maximise floorplans in commercial and high-rise buildings, has a cement replacement rate exceeding 40%.

To ensure we continue to create value for our customers through innovative product solutions, we are working to develop further material innovations. This includes supporting and partnering with third parties such as universities. See page 48 for more information about our lower carbon concretes.

## Supplementary cementitious materials

We are investigating opportunities to further reduce the clinker-to-cement ratio in our operations, by replacing clinker with a greater proportion of SCMs.

We are working to access and secure higher volumes of usable fly ash and slag as a cementitious substitute material in Australia.

The suitability of fly ash as a replacement for cement in Australia depends on its quality and technical attributes, as well as our ability to economically acquire it.



Low-carbon solid-waste derived fuels facility at Berrima, NSW

## Optimising operational flexibility

Being operationally flexible is an increasingly important consideration in our long-term planning and capital investment decisions. For example, our Boral Cement Geelong storage and grinding facility, currently under construction, allows for the use of a broader range of SCMs such as slag.

We are also:

- considering carbon pricing in our long-term supply chain network optimisation plans and in significant capital investment decisions, particularly where energy costs are material, and
- building our competency in monitoring regional carbon and energy policy settings, and understanding the implications for our Cement business.

Boral Cement's key climate-related strategic initiatives are consistent with the International Energy Agency's (IEA's) recommendations for the cement industry, as outlined in its *Tracking Clean Energy Progress* report. Published in May 2019, the report outlines key strategies to align with IEA's Sustainable Development Scenario to achieve the Paris Agreement's well below 2°C climate goal. These strategies include:

- improving energy efficiency
- switching to lower carbon fuels, such as waste and biomass
- reducing the clinker-to-cement ratio, and
- advancing process and technology innovations.

# Environmental impacts

We operate a diverse portfolio of businesses across a broad geographic footprint. Many of these operations are resource-intensive, including our quarrying, manufacturing and transport businesses. To ensure our business is sustainable for the long term, we work to mitigate our environmental impacts.



**Our Environment Policy is to eliminate adverse environmental impacts and where elimination is not possible, seek to minimise our adverse environmental impacts.**

In addition to our overarching climate-related goals and targets, we have a range of business-level improvement plans and goals, including targets for improving water efficiency, reducing waste generation and increasing use of recycled materials in our products in Boral Australia. We are also working to better quantify and align targets and improvement plans across our divisions.

## Environmental compliance

Our policy is, at a minimum, to comply with environmental legislation, regulations, standards and codes of practice relevant to the particular business. We typically target better performance than laws require.

With more than 670 operating sites across a broad geographical footprint, Boral's environmental management systems and compliance programs are designed to accommodate local environmental requirements and business variations.

Operational and functional teams are responsible for ensuring compliance with environmental regulations. In Boral Australia, compliance is managed through an information management system for environmental requirements and regulations.

During FY2019, we conducted 60 internal environmental compliance audits in Boral Australia and 21 in Boral North America.

USG Boral conducts a range of compliance activities across its operations, focusing on the key areas of stack emissions and dust control, with annual audits conducted on burners and dust control equipment.

In addition, the Group HSE function undertook 16 audits across a sample of sites, assessing areas of environmental risk, including environmental compliance.

We target zero environmental infringements and strive to continuously improve our environmental management and performance.

During the year, we received nine infringement penalties across the Boral Group, totalling \$38,820. Seven of these infringements related to non-compliances in administrative arrangements, rather than causing environmental impacts. Two infringements related to:

- washing out two concrete agitator trucks on a roadside near Port Stephens in NSW, and
- the release of water from our Cedars Quarry at Mackay in Queensland that was outside our licence parameters, following Tropical Cyclone Debbie.

## WATER MANAGEMENT

Water supply is essential to our operations. We require fresh water for our concrete and plasterboard operations, while our quarry and asphalt operations can use recycled, brackish and/or process water. Water is used in manufacturing, for dust suppression, cleaning and sanitation.

In FY2019, we used about 4 gigalitres of municipal water, in line with the prior year.

In our more water-intensive concrete and plasterboard businesses, where product specification does not allow the use of recycled water, we are investing in researching and developing new products and mixes that require less water.

Over time, we have expanded the use of site-captured rainwater, which is supplementing our municipal supply. At our larger sites, including our quarries, captured rainwater is often the primary source of water and largely used for dust control.

In Boral Australia, we are developing systems to collect reliable and more comprehensive data on captured rainfall.

Across the Group, we are focused on improving water consumption per unit of output and ensuring we have plans to underpin delivery of our efficiency improvement targets, particularly in geographic areas of potentially high water stress.

Infringements and penalties	FY2019	FY2018	FY2017	FY2016
Number	9	6	10	9
Fines <sup>1</sup>	\$38,820	\$82,273	\$110,083	\$33,888
Penalties <sup>1</sup>	\$0	\$0	\$30,000	\$250,000
Undertakings	\$0	\$133,000	\$133,556	\$0

1. Regulators issue fines and the courts issue penalties.

# Environmental impacts

(continued)

Individual Boral sites may from time to time be exposed to the risk of drought, deluge or flooding. The risk of insufficient or excess water at our sites is discussed in relation to physical climate-related risks on pages 35–36.

When building or acquiring new facilities, our due diligence process includes assessing the risks to water quality from site discharges, and ensuring sufficient water availability and supply, which may require river catchment assessments.

Across the Group, a relatively small amount of process water is discharged to sewers for treatment by water authorities, in line with our existing licensing conditions at relevant sites. We have well-established internal compliance systems to prevent pollution of discharged waters, as well as numerous regulatory controls through licensing and permitting.

## WASTE MANAGEMENT

We strive to reduce waste within our operations, recycle the waste that we generate, and increase the recycling of materials from other industries as energy or raw materials.

Throughout Boral's operations, we reuse some materials in our production processes, including concrete washout, recycled asphalt pavement, and plasterboard waste from production and building sites.

Approximately 10% of Boral's revenue is derived from lower carbon and high-recycled-content products. A large proportion of this revenue is from our Fly Ash business in North America and Boral Recycling in Australia.

Opportunities to reuse production by-products and waste materials continue to grow and are being actively pursued. See pages 39 and 49 for some examples of how we are looking to use recycled materials likely headed for landfill as energy and raw materials.

Boral's businesses generate only small volumes of hazardous waste (such as waste oil) and this is managed in accordance with government regulations.

We use relatively small amounts of packaging, as the vast majority of our products are delivered in bulk. Boral businesses in Australia that do use some packaging are signatories to the Australian Packaging Covenant or fulfil the requirements of state regulations. Boral Cement, through its membership of Cement Concrete & Aggregates Australia, is a signatory.

## LAND MANAGEMENT, REHABILITATION AND REMEDIATION

We manage our quarries and land assets responsibly. For each of our extraction and operating sites, we carefully plan to mitigate any adverse environmental impacts – from development applications and operational land use to rehabilitation and end-use planning and development.

We have a substantial land footprint. Across Australia and the USA, we own or lease over 150 locations that are greater than 20 hectares in size, totalling more than 26,000 hectares.

At sites where we extract natural resources or manufacture products, we anticipate having to fulfil environmental rehabilitation and/or remediation obligations. These obligations relate to the future rehabilitation of sites, or clean-up of contamination we caused, at the appropriate point in the life cycle of these operations. They enable the ongoing use of the relevant land, either as an industrial property or for a higher value end use.

The anticipated future costs associated with remediating and rehabilitating sites are provisioned for in our financial statements, based upon our estimate of associated costs.<sup>1</sup>



Rehabilitation at Dunmore Lakes, NSW

## Biodiversity

Protecting the diversity of plant and animal species at and around our operational sites is a core component of our land management efforts.

Of Boral's operations, our Quarries business has the highest potential to contribute to but also mitigate biodiversity impacts.

All greenfield sites or expansions to existing operations undergo comprehensive internal and – where required – external assessments to identify biodiversity risks. When we identify risks we address them through a range of mitigation activities such as offsets (either on- or off-site) and biodiversity area enhancements.

We identify biodiversity risks associated with new operations through Boral's due diligence processes and address them in environmental impact assessments.

Biodiversity obligations that are integrated into site permits are audited under Boral's environmental audit program.

1. See note 3.6 of the financial statements in the 2019 Annual Report for details of the provision.

All sites identified as having biodiversity values have management plans in place in accordance with site-specific needs. Where appropriate, these include specific targets and timeframes.

Some examples of the many initiatives in place to protect biodiversity at Boral's sites include:

- collaborating with the Royal Botanic Garden Sydney in research on the endangered Illawarra Socketwood population at Dunmore Quarry in NSW
- maintaining koala fodder plantations at Narangba and Petrie quarries in Queensland, and
- participating in conservation work to provide habitat for the threatened legless lizard and spiny rice-flower at Deer Park Quarry in Victoria.

Through our community partnership with Conservation Volunteers Australia, we support conservation and education initiatives in our local communities. Refer to our website for more detail. 

## AIR QUALITY

Controlling air quality around our operations is our responsibility as a good neighbour, and is typically a regulatory requirement. Boral has many processes and systems in place to minimise air emissions across our operations.

Where we have identified that emissions are a significant risk or local community health concern, our operations have engineered and procedural controls, ranging from scrubber and filtering systems at major manufacturing sites (such as cement, bricks or plasterboard manufacturing), to simpler dust suppression measures such as water sprinklers that are typical of quarries and concrete batching plants.

Where relevant, Boral's operations have either continuous or scheduled air quality monitoring programs, and data is available to local communities through regulatory reporting or stakeholder engagement programs.

At a national level, Boral reports data on various emissions to the National Pollutant Inventory (NPI) and the National Greenhouse and Energy Reporting Scheme (NGERS) in Australia.

## Berrima Colliery closure

In 2013, Boral ceased coal extraction at the small-scale Berrima Colliery in the Southern Highlands of NSW, after nearly a century in operation.

The colliery has since been in care and maintenance mode as we work on an agreed closure plan with the NSW Resources Regulator, NSW Environment Protection Authority and other relevant agencies – and with the local community by way of our Closure Working Group.

This process includes ongoing monitoring and testing of groundwater that naturally runs through the disused mine, and of water quality in the Wingecarribee River, upstream and downstream of the mine's licensed discharge point.

Since December 2017, we have operated an underground water treatment system that has successfully improved the discharge water quality and subsequent visual appearance of the Wingecarribee River downstream of the discharge point.

In FY2019, we progressed with installing a number of underground bulkheads to sustainably manage groundwater over the long term. We will monitor the effectiveness of these bulkheads, and their impact on the volume and quality of water flows.

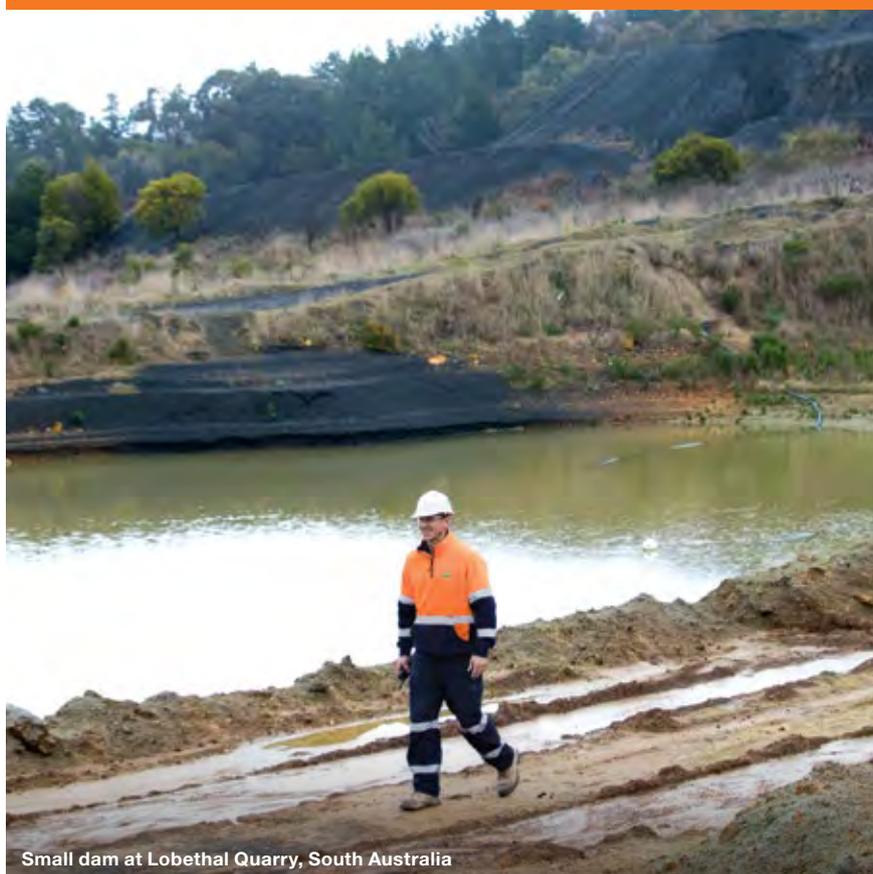
## MANAGING THE RISKS AROUND DAMS

Following the experiences of tailings dam failures at other major companies, we reviewed the risks associated with impoundments and small dams at our operations.

Although our dams are substantially smaller than those involved in these incidents, we completed a desktop assessment of the risks associated with extreme weather, including rainfall deluge, at sites with some form of constructed impoundment wall.

We identified a small number of sites that warranted further investigation. We are actively managing these sites, including by implementing additional engineering controls to ensure we manage risks within accepted standards.

We intend to undertake a formal Group-wide review of the risks associated with impoundments at least every three years. We will also continue to monitor global events to identify potential learnings, including by benchmarking good practice among industry peers.



Small dam at Lobethal Quarry, South Australia

# Social and community impacts



**We aim to create value for the local communities in which we operate, by providing economic and social benefits. We are committed to managing our operations responsibly and building positive long-term relationships with our local stakeholders.**

Our operations contribute to the economic prosperity of our local communities by providing employment, supporting local enterprises, investing in the community more broadly and paying our fair share of taxes.

In addition to observing our site-specific regulatory requirements and planning approvals, we openly listen to community concerns. We address challenges and make improvements where possible.

We recognise that some elements of our business can contribute to local community concerns. These elements include traffic, noise, odours, water, waste, end use of quarry land, and the potential impact of our activities on biodiversity and cultural heritage. How we manage our environmental impacts is detailed on pages 43–45.

Boral's commitment to stakeholder engagement is underpinned by communication and consultation with local communities.

As part of our engagement, we operate Community Consultation Committees across our key sites in Boral Australia. The committees include elected community representatives who meet with interested residents and other local stakeholders. We also seek to keep local communities informed through online information resources, newsletters, local advertising, community inspections, community meetings and site tours.

We hold regular community liaison meetings at various operating sites – attended by community, council and government representatives – to address local issues concerning our operations.

Boral continues to be acknowledged as an industry leader in community engagement. This year, Boral received the national Cement Concrete & Aggregates Association award for community leadership, which recognised our contribution to reducing the risk of social isolation for elderly and disadvantaged residents on the far north coast of NSW.

We also received the Cement Concrete & Aggregate Association's Tasmanian Innovation Award for community engagement. The award recognised Boral's communication plan to engage with all local residents prior to and during construction of our Launceston concrete plant.

## INDIGENOUS ENGAGEMENT

Boral's Reconciliation Action Plan outlines our commitments and planned actions to strengthen relationships with, respect for and opportunities in Aboriginal and Torres Strait Island communities.

We are committed to protecting places and items of cultural significance to local Aboriginal and Torres Strait Island groups across our Australian operations. We work alongside Indigenous peoples to protect cultural heritage, including across our sites that are subject to Cultural Heritage Management Plans.

For example, in FY2019, we held Aboriginal cultural heritage presentations at our Ormeau Quarry in Queensland, which included the repatriation of artefacts found on site.

## PUBLIC ROAD SAFETY

Boral operates or engages a large number of trucks on public roads, particularly in Australia, to transport and deliver our products and services.

Safety compliance requirements are generally well defined for heavy vehicle operations in most jurisdictions in which we operate. We comply with minimum requirements and in some cases do better than the minimal compliance requirements and industry norms – for example, by investing in higher-specification concrete agitator vehicles.

Our largest fleet is in Australia, where our dedicated Compliance team works to meet the requirements of the National Heavy Vehicle Regulator. These include mass management, load restraint, driver hours and vehicle condition.

Boral routinely collaborates with state and municipal authorities to ensure we adhere to legislated traffic safety and management requirements, including with regard to the road environment around our sites.

In FY2019, Boral launched a community partnership with Road Safety Education, to support youth education in road safety across Australia. See page 47 for details.

## SUPPORTING VOCATIONAL TRAINING OF INMATES

At Boral's Deer Park Quarry in Victoria, we are partnering with the neighbouring Dame Phyllis Frost Centre (DPFC) to provide its inmates with practical experience, to support their formal horticultural training as part of DPFC's vocational services.

The program aims to assist inmates with their future employment prospects, and participation is voluntary.

In FY2019, the project involved propagating and planting of around 8,000 plants along the perimeter of the quarry, which will assist with noise and dust reduction. The project considered working protocols, risk assessments and Safe Work Method Statements. Boral provided a separate work compound with facilities, and bus transport for the program participants.

## COMMUNITY INVESTMENT

**Boral has a long and proud history of supporting the local communities in which we operate. Through our community investment program, we aim to make a valued and sustainable contribution to the wellbeing of these communities.**

Our community investment framework helps us identify organisations and projects that share our values, and for which our resources can have the greatest impact.

Our community investment framework is underpinned by three pillars: Our People, Our Places and Our Products. It provides guidance in identifying and evaluating opportunities, and deciding how best to address community needs and priorities.

### What we focus on through our community investments



#### Our People

- Contribution and engagement
- Safety and wellbeing
- Diversity and inclusion
- Learning and development

#### Our Places

- Community safety and wellbeing
- Developing inclusive and sustainable communities
- Conservation: biodiversity and cultural heritage

#### Our Products

- Product support for communities and people in need
- Showcasing Boral's approach to innovation and environmental sustainability

In addition to the financial contribution we make through cash and materials, and employee fundraising and events, we actively seek opportunities to engage our employees in our community partnerships, and to facilitate knowledge sharing.

Supplementing the work we do with our six key community partners, we provide modest funding and assistance to several other organisations, including Outward Bound Australia to support youth leadership development, and the University of New South Wales to help fund scholarships for women studying engineering.

**\$1,260,000**

contributed to our community partnerships and local community causes and projects

**\$1,036,000**

cash

**\$63,000**

materials

**\$161,000**

fundraising and events

#### Our key community partners

- Road Safety Education
- Habitat for Humanity
- Bangarra Dance Theatre
- Conservation Volunteers Australia
- Taronga Conservation Society
- HomeAid America

Further information is available on our website. [▶](#)

## NEW ROAD SAFETY PARTNERSHIP

To support Boral's ongoing commitment to Zero Harm and road safety, we launched a new partnership with Road Safety Education (RSE), supporting its flagship RYDA program.

Each year, the RYDA program helps educate 40,000 Australian high school students on road safety. The program helps students develop personalised strategies and skills so they can respond positively to challenges on the road, both as drivers and as influential passengers.

Boral assisted RSE in developing new educational material to incorporate in to the RYDA program, teaching young drivers how to share the road safely with heavy vehicles.

With a fleet of more than 3,000 heavy vehicles on the road in Australia, we have been keenly focused on improving heavy vehicle safety risks for many years.

Knowing that 93% of fatal crashes involving heavy vehicles are not caused by the heavy vehicle driver, we have worked with RSE to share our knowledge. This is improving road safety for the students, heavy vehicle drivers and the broader community.



# Customers and sustainable products

We have tens of thousands of customers across our global operations, and we play a central role in providing the building products and construction materials that enable our customers to build the homes and cities of tomorrow.



**Across our three divisions, we supply products to a wide range of customers, from people renovating their homes through to large-scale builders and commercial developers.**

Through our integrated construction materials business in Australia, we also supply to major infrastructure projects that require complex and highly technical solutions. And through our Fly Ash business in the USA, we are helping cement and concrete producers deliver construction materials that perform better and produce fewer carbon emissions.

As construction technologies and the needs of our customers evolve, we will strive to remain at the forefront of new developments, and to deliver high-quality, innovative solutions and sustainable products.

### Boral's concrete innovations

Boral's concrete solutions address specific engineering, design and sustainability needs over and above the capability of conventional concrete available in the market. Some examples of our advanced concretes are ENVISIA®, Aspire® and Enflo®.

ENVISIA® lower carbon concrete meets the targets of the Infrastructure Sustainability Council of Australia (ISCA) and helps the construction industry achieve higher Green Star ratings on projects assessed by the Green Building Council of Australia.

In addition to its lower carbon qualities, achieving a cement replacement of up to 65%, ENVISIA® provides other valuable benefits including high flexural strength, low shrinkage and high durability. This combination of qualities led to Boral being selected to supply to the Crown Sydney project at Barangaroo in NSW.

Its durability and sustainability led to the Queensland Department of Transport and Main Roads approving the ENVISIA® binder system, enabling us to supply it for Queensland infrastructure projects.

Aspire® is a very high-strength concrete specifically developed to maximise concrete stiffness. This allows designers to maximise floor space by incorporating thinner vertical elements in commercial and high-rise buildings. Aspire® also has a lower overall Portland cement content compared to equivalent high-strength concrete.

The new 50-storey Suncorp headquarters in Brisbane will be built with ENVISIA® and Aspire® over FY2020–21.

Enflo® is concrete that self compacts, enabling our customers to place concrete faster without the need for vibration to compact or consolidate, saving labour and time.

### Plasterboard solutions

Launched in 2018, USG Boral's new Ensemble™ Acoustical Plasterboard Ceiling is an innovative solution for interior ceilings that combines the seamless look of plasterboard with acoustical properties.

USG Boral is also continuing to progress plant trials and product development to successfully adapt the USG-developed Sheetrock® EcoSmart Panels technology to local markets.

We are focusing initially on selected geographies including Australia, where we are optimising the process and formulations to suit Australia's thinner boards, and identifying opportunities to further lower material costs.

### High-recycled-content exterior cladding

Boral North America's poly-ash TruExterior® Siding & Trim products offer the look of wood while surpassing the durability and workability of timber and alternative products. The products are certified by SCS Global as being manufactured using 70% recycled materials (fly ash) and are Cradle to Cradle Certified™.



## IMPROVING THE CUSTOMER EXPERIENCE

In Boral Australia, our Customer Experience program is focused on delivering better outcomes for our customers and our business.

To help us understand how we can better serve our customers, we are strengthening the methods we use to capture customer feedback. This year, Boral Australia introduced customer surveys and began reporting three types of Net Promoter Score (NPS): an Interaction, Episode and Strategic score.

We monitor our Interaction NPS on a daily basis across a number of product lines, gathering feedback on individual customer interactions. This enables our teams to respond to any negative NPS scores quickly and proactively, so we can implement improvement measures and make our customers' next interaction with Boral a positive experience.

Our Boral Concrete business has engaged with a broad cross-section of customers and non-customers to obtain feedback on a strategic level, and for each step of the customer journey. This data will establish a baseline NPS and form the basis of internal targets for improving our customers' experiences.

During the year, Boral North America has focused on cross-branding and providing a single entry point for our Boral North America suite of building products.

In USG Boral, our new customer-centric improvement program is underway. The initiative includes a focus on optimising our value propositions through improved customer segmentation. This has already led us to roll out several new products and systems, including EasiFinish™ in emerging markets in Asia.

### Boral Connects

Making it easier for customers to deal with us is at the heart of Boral Australia's new customer portal, Boral Connects.

Our portal makes our interactions more transparent to our customers, and saves customers' time when dealing with Boral, by allowing them to view, confirm or cancel orders online. Customers can also view the expected time of arrival of their orders in near real time, enabling them to more effectively manage their job site.

This new digital channel is making it easier for our customers to work with us, allowing them to use self-service rather than call our customer service centre. It is also reducing our customer support costs.



Louise Keyte, General Manager Technology Execution, Innovation Factory, NSW

## PRODUCT STEWARDSHIP

We are committed to responsibly managing the health, safety, environmental and social aspects of our products, from the product development phase through to its end of life.

In FY2019, we established a Boral Product Stewardship Network to oversee the implementation of all activities governed by the Boral Product Stewardship Framework and Boral Product Stewardship Standard. Sponsored by the Group HSE Director, the network consists of representatives from each of Boral's divisions and meets at least three times a year.

The Boral Product Stewardship Framework is focused on managing risks across the life cycle of our products, and provides a consistent approach across the Group.

Boral's Product Stewardship Standard, within our HSEQ MS, requires all new or modified products to have a documented assessment of HSEQ risks. The standard also outlines minimum requirements for handling and using products, in the form of Safety Data Sheets, product labelling and Safe Work Method Statements.

## INVESTING IN INNOVATION

In FY2019, we invested about \$30 million in research and development (R&D) across our three innovation centres in the USA, Australia and Thailand. Our Innovation teams are helping Boral deliver superior building products and construction materials to better serve our customers and develop new markets.

At our Innovation Factory in Maldon, NSW, we are focused on R&D in cement, concrete and alternative binders with a lower carbon footprint and improved properties for customers. The team recently developed and commercialised the Aspire® high-performance concrete.

At our North America Innovation Factory in San Antonio, Texas, our efforts are focused on developing the next generation of composite materials for the Stone, Roofing and Lightweight Building Products businesses. These product solutions aim to provide superior performance compared to conventional products, and will also incorporate recycled content.

USG Boral's R&D Centre in Saraburi, Thailand, is using world-class technologies to develop innovative products and systems that address market needs and deliver superior performance.

## SUPPORTING A CIRCULAR ECONOMY

Boral Asphalt, in partnership with the City of Canning in Western Australia, trialled a new asphalt product containing four different types of recycled materials that were likely headed to landfill. This follows a successful trial of using plastic in asphalt in Stockton, NSW, earlier this year. The recycled materials used in a suburban street included asphalt pavement, tyres, glass and plastic bottles.

The transition to offering sustainable recycled products within our suite of asphalt mixes presents a significant opportunity to reduce the amount of waste sent to landfill and to support a circular economy approach.

# Supply chain

Boral has an extensive global supply chain across more than 25 countries. Each year, we spend about \$4 billion on purchasing products and services from more than 10,000 suppliers and contractors.



Delivering an efficient, agile and cost-effective supply chain is vital to meeting our customers' expectations and delivering on our business strategy. Our Supply Chain Optimisation initiatives across Boral Australia and Boral North America are focused on improving our customer experience by building more reliable, more transparent and lower cost integrated supply chains.

Our customers and other stakeholders want to be confident that our products and services are sourced and produced in a responsible and sustainable way. We are committed to creating positive change by making responsible and sustainable purchasing decisions.

## MANAGING OUR SUPPLY CHAIN

Our Group procurement team, headed by Boral's Chief Procurement Officer, is responsible for managing Boral's suppliers including policy, risk management and sustainable sourcing. The team is supported by regional and divisional procurement teams across our global operations.

Although sustainable procurement is embedded across the procurement function, we also have a dedicated Sustainability Procurement Manager supporting this capability, including our focus on promoting supplier diversity.



>10,000  
suppliers



~\$4 billion  
spent per year

## SUSTAINABLE PROCUREMENT

Our Sustainable Procurement Policy underpins our approach to sustainable procurement and outlines our commitments to purchasing goods and services in a responsible way. This includes:

- ensuring suppliers are aware of and comply with our Supplier Code of Conduct
- promoting diversity and inclusion in our supply chain, including through social and Indigenous enterprises, and
- assessing and managing the risk of modern slavery in our supply chain.

The policy aims to align our practices with the International Standard for Sustainable Procurement, ISO 20400.

Boral's Supplier Code of Conduct requires our suppliers to adhere to minimum standards relating to health and safety, environment and labour, including prohibiting the use of child labour and complying with modern anti-slavery legislation.

Although Boral has typically responded to small supplier requests for shorter payment terms, we have now become a signatory to the Business Council of Australia's Supplier Payment Code. As a signatory to the voluntary code, we are supporting Australian small businesses by providing payment terms of 30 days or less, and simplified payment processes.

## Assessing our suppliers

We monitor supply chain risks by assessing suppliers' performance and their alignment with Boral standards, including through a pre-qualification questionnaire. In Australia, we engage a third-party service to register and monitor suppliers' compliance with our pre-qualification requirements.

We assess supply chain risks including corruption and bribery, human and labour rights, HSE compliance, and quality standards. We may also visit a supplier's factory based on our risk evaluation results.



In Boral Australia and USG Boral, we use a sanction screening process to identify any areas of risk associated with elements such as financial crime, fraud and human rights abuse.

During the year, we established a risk assessment framework focused on modern slavery risks in our supply chain, as detailed below.

### Modern slavery risk in supply chain

We respect internationally recognised human rights, and are committed to preventing and mitigating adverse human rights impacts throughout our supply chain, as outlined in our Human and Labour Rights Policy.

In FY2019, we continued to develop and strengthen our approach to preventing modern slavery in our Boral Australia and Boral North America divisions. We will consider USG Boral's approach in more detail once strategic ownership changes impacting the business have been resolved in FY2020.

We mapped our supply chain in Boral Australia and Boral North America, identifying the key areas of modern slavery risk for both direct and indirect suppliers, and developed a risk-ranking methodology.

Our risk assessment focused on supplier categories with significant expenditure, including raw materials, capital equipment, plant and equipment, packaging, fuel and labour, consumer goods and maintenance, and repairs and operational services.

Risk factor measurements considered the type of products and services provided, as well as the country of origin and industry. Our country risk rankings are based on established external indices and indicators.

During the year, key procurement staff participated in modern slavery assessment workshops and contributed to peer industry forums on the topic. We also extended our FairCall external whistleblowing service to suppliers.

We will continue to develop our approach to modern slavery, and in FY2020, will finalise the implementation of:

- systems and processes for reviewing new and existing suppliers, and conducting ongoing monitoring
- due diligence processes based on our modern slavery risk assessments, including third-party assurance for high-risk suppliers

## PROMOTING INDIGENOUS SUPPLIERS

We have a proactive approach to the inclusion of Aboriginal and Torres Strait Islander suppliers in our supply chain in Australia, as articulated in our Indigenous Procurement Policy.

Boral's Reconciliation Action Plan outlines our planned actions focused on ensuring that Aboriginal and Torres Strait Islander suppliers are properly represented in our supply chain. This includes further leveraging the practical support provided through our membership of Supply Nation to meet or exceed our obligations under federal, state and territory government Indigenous procurement policies.

In FY2019, our spend on Aboriginal and Torres Strait Islander suppliers, outside of our government procurement obligations, was more than \$5 million.

- company-wide modern slavery awareness initiatives and training
- a fully rolled-out framework that includes internal audit reviews of supplier screening, and reporting to ensure compliance, and
- formal processes for reporting any incidents of modern slavery identified – including to the Board and Board Audit & Risk Committee – and implementing remedial actions.

## SUSTAINABLE SOURCING OF TIMBER AND PAPER

We are committed to promoting responsible and sustainable forest management. Our most significant exposure to deforestation risk is through our Timber business and the paper USG Boral purchases for plasterboard lining.

All timber sourced by Boral Timber comes from sustainably managed forests through an accredited scheme. Boral Timber's supplier, Forestry Corporation of NSW, is the largest manager of commercial native and plantation forest in NSW, and is certified to meet the Australian Forestry Standard (AFS). AFS is an independently audited forest management standard that provides assurance that forests are managed in a sustainable way.

Boral Timber's hardwood products are certified to the AFS Chain of Custody standard. Compliance with this standard confirms that our hardwood timber products are sourced from certified, legal and sustainable resources by tracking products back to their source.

In FY2019, USG Boral used about 170,000 tonnes of paper in manufacturing plasterboard, nearly all of which is certified as recycled paper by the Forest Stewardship Council (FSC) or the Programme for the Endorsement of Forest Certification (PEFC).

## SUPPLY CHAIN LOGISTICS

Ensuring the effective and efficient management of supply chain logistics is critical to meeting our customers' expectations.

In Boral Australia and Boral North America, our focus on customer experience includes improving the rate at which orders are delivered in full and on time, and invoiced correctly (DIFOTIC).

Our multi-year Supply Chain Optimisation program in Boral Australia and Boral North America is a key initiative expected to deliver improved DIFOTIC outcomes. The program focuses on improving the efficiency and effectiveness of our operated and outsourced logistics, planning and inventory control, and related information flows.

Initiatives underway in Boral Australia include the automation of transport allocations, integrated end-to-end planning, and digitalisation of the information flow between our operations, fleet and customers. Our Boral Connects customer portal, discussed on page 49, is enabling a more efficient flow of information to and from our customers.

Achieving zero harm to our people, suppliers, customers and the public is a key priority in managing our logistics operations.

Our approach to managing public road safety and heavy vehicle safety is detailed on pages 31 and 46. Our contracted drivers must meet the same safety requirements as our employees, which includes complying with minimum mandated vehicle safety standards. We also have robust systems and processes in place to manage safe access and delivery to our customers' sites, which includes site inspections on arrival.

Our Supply Chain Optimisation program is expected to reduce energy and carbon emissions intensity by delivering more products over fewer kilometres.<sup>1</sup>

1. The carbon emissions associated with our owned and outsourced transport logistics, encompassing road, rail and shipping, is included in our Scope 1 and 2, and Scope 3 carbon emissions data on pages 38–39.



Building a better  
working world

# Independent Limited Assurance Statement to the Management and Directors of Boral Limited

## Our Conclusion:

Ernst & Young ('EY', 'we') was engaged by Boral Limited ('Boral') to undertake 'limited assurance' as defined by Australian Auditing Standards, hereafter referred to as a 'review', over selected sustainability performance data within the Boral Review for the year ended 30 June 2019. Based on our review, nothing came to our attention that caused us to believe that the selected sustainability data has not been prepared and presented fairly, in all material respects, in accordance with the criteria defined below.

## What our review covered

We carried out a review over selected sustainability performance data within the Boral Review for the year ended 30 June 2019.

### Review Subject Matter

The Subject Matter for our limited assurance engagement included selected sustainability performance data, limited to those aspects listed below, for the year ended 30 June 2019:

- ▶ Total greenhouse gas (GHG) emissions (Scope 1 and 2) for Boral Group (in million tonnes of carbon dioxide equivalent (mtCO<sub>2</sub>-e))
- ▶ Total energy consumed for Boral Group (in petajoules (PJ))
- ▶ Scope 1 and 2 GHG emissions intensity reduction for Boral Group (tCO<sub>2</sub>-e per AUD\$m)
- ▶ Avoided carbon emissions from fly ash sales for Boral Group (mtCO<sub>2</sub>-e)
- ▶ Share of revenues from lower carbon and high-recycled content products for Boral Group (as a percentage of revenue, excluding equity accounted joint ventures)
- ▶ Total number and value (Australian dollars (AUD\$)) of significant environmental infringements and penalties
- ▶ Lost Time Injury Frequency Rate (LTIFR)
- ▶ Recordable Injury Frequency Rate (RIFR)
- ▶ Workforce statistics by occupation, age and length of service (as a percentage of total)
- ▶ Female representation by position (as a percentage of total)
- ▶ Employee engagement metric for USG Boral (score out of 100)
- ▶ Community contributions (AUD\$).

The Subject Matter did not include Management's forward-looking statements.

### Criteria applied by Boral

In preparing the Boral Review, Boral applied the following criteria:

- ▶ Global Reporting Initiative (GRI) Standards
- ▶ Boral's own publicly disclosed criteria as established in the Boral Review.

## Key responsibilities

### EY's responsibility and independence

Our responsibility is to express a conclusion on the selected sustainability performance data based on our review.

We were also responsible for maintaining our independence and confirm that we have met the requirements of the *APES 110 Code of Ethics for Professional Accountants* and that we have the required competencies and experience to conduct this assurance engagement.

### Boral's responsibility

Boral's management is responsible for selecting the Criteria, and for preparing and fairly presenting the Boral Review in accordance with that Criteria. This responsibility includes establishing and maintaining internal controls, adequate records and making estimates that are reasonable in the circumstances.

## Our approach to conducting the review

We conducted this review in accordance with the Australian Auditing and Assurance Standards Board *Australian Standard on Assurance Engagements Other Than Audits or Reviews of Historical Financial Information* ('ASAE 3000') and *Australian Standard on Assurance Engagements on Greenhouse Gas Statements* ('ASAE 3410') and the terms of reference for this engagement as agreed with Boral.

### Summary of review procedures performed

A review consists of making enquiries, primarily of persons responsible for preparing the selected sustainability performance data and related information, and applying analytical and other review procedures.

Our procedures included:

- ▶ Conducting interviews with key personnel to understand the process for collecting, collating and reporting the selected sustainability performance data during the reporting period
- ▶ Checking that the calculation criteria has been appropriately applied in accordance with the methodologies outlined in Boral's Criteria
- ▶ Undertaking analytical review procedures to support the reasonableness of the data
- ▶ Identifying and testing assumptions supporting calculations
- ▶ Testing, on a sample basis, to underlying source information to check the accuracy of the data.

We believe that the evidence obtained is sufficient and appropriate to provide a basis for our limited assurance conclusions.

### Limited Assurance

Procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for a reasonable assurance engagement. Consequently the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

While we considered the effectiveness of management's internal controls when determining the nature and extent of our procedures, our assurance engagement was not designed to provide assurance on internal controls. Further, our procedures did not include testing controls or performing procedures relating to checking aggregation or calculation of data within IT systems.

### Use of our Assurance Statement

We disclaim any assumption of responsibility for any reliance on this assurance report to any persons other than management and the Directors of Boral, or for any purpose other than that for which it was prepared.

Terence Jeyaretnam FIEAust  
Partner

5 September 2019

Ernst & Young  
Melbourne, Australia

# Glossary

<b>CO<sub>2</sub>-e</b>	Carbon dioxide equivalent – a standard unit for measuring carbon footprints
<b>(Portland) cement</b>	A fine powdery material produced by milling clinker in combination with limestone, iron slags and fly ash. When mixed with water and sand, cement can be used to bind or join as a ‘mortar’ or, when combined with aggregates and sand, to create strong and hard ‘concrete’ surfaces and structures
<b>Clinker</b>	Lumps or nodules produced by sintering and calcining limestone and aluminosilicate materials such as clay during the cement kiln stage
<b>EBIT</b>	Earnings before interest and tax
<b>EBITDA</b>	Earnings before interest, tax, depreciation and amortisation
<b>Employee turnover</b>	The number of employee departures during the year
<b>FY</b>	Financial year
<b>Fly ash</b>	A by-product of coal-fired electricity generating plants that is used as a substitute cementitious material
<b>GHG emissions</b>	Greenhouse gas emissions, mainly CO <sub>2</sub> and methane
<b>GJ</b>	Gigajoule – equal to 1 billion joules
<b>HSE</b>	Health, safety and environment
<b>HSEQ MS</b>	Health, Safety, Environment and Quality Management System
<b>IEA</b>	International Energy Agency
<b>LTIFR</b>	Lost time injury frequency rate – the number of employee lost-time injuries per million hours worked during the period
<b>Modern slavery</b>	Defined by the Australian <i>Modern Slavery Act 2018</i> as including eight types of serious exploitation: trafficking in persons, slavery, servitude, forced marriage, forced labour, debt bondage, the worst forms of child labour, and deceptive recruiting for labour or services
<b>Operating site</b>	A wholly owned or joint venture operating site excluding sales, administration and distribution offices
<b>Paris Agreement</b>	An agreement within the framework of the United Nations Framework Convention on Climate Change
<b>PJ</b>	Petajoule – equal to 1 million gigajoules
<b>RIFR</b>	Recordable injury frequency rate – the number of employee injuries that result in medical treatment as well as those that result in lost work time per million hours worked
<b>ROFE</b>	Return on funds employed calculated as EBIT before significant items on funds employed
<b>Scope 1 emissions</b>	Direct emissions from the combustion of fuels in manufacturing and transport, and chemical process emissions (such as from calcination of limestone). Calculated using factors and methodologies set out in legislation, regulatory or international best practice guidance
<b>Scope 2 emissions</b>	Indirect (attributed) emissions from electricity purchased, calculated using factors particular to regional electricity grids. Such factors are usually defined in legislation or regulatory guidance
<b>Scope 3 emissions</b>	Indirect emissions, other than from Scope 2 emissions, that are generated in the wider economy. These may include emissions from production of purchased goods and services, through to the use of sold products and services, and in particular for Boral, from transport of materials both upstream and downstream in our supply chain. Calculated based on a number of internationally accepted reporting standards
<b>TCFD</b>	The Financial Stability Board’s Task Force on Climate-related Financial Disclosures
<b>Ton</b>	A weight measure commonly used in the USA, equivalent to 2,000 pounds or 907 kilograms
<b>Tonne</b>	A metric weight measure equivalent to 1,000 kilograms

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**AGM DETAILS**

**The Annual General Meeting of Boral Limited**  
**will be held at the Civic Pavilion, The Concourse,**  
**Chatswood, NSW on Wednesday, 6 November 2019**  
**at 10.30am.**

# CONNECT



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To easily access:

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