



2016  
BOYNE  
SMELTERS  
LIMITED

Sustainable Development Report



# A MESSAGE FROM OUR GENERAL MANAGER



Welcome to Boyne Smelters Limited's (BSL) 2016 Sustainable Development Summary. We provide this information to help our interested stakeholders understand more about our business, while also providing a snapshot in time of our operational performance.

The people of BSL have proven their 'mettle' once again in 2016. Their resilience and tenacity to strive to be the safest, most efficient aluminium smelter in Australia is inspiring. Despite our market challenges, in 2016 they have achieved the highest hot metal production and second best safety result in the smelter's 34-year history. Not only that, we became Australia's largest aluminium can recycling facility in 2016 through our community partnership with Endeavour Foundation. We have never been more proud of what we do and how we take care of each other, the environment and the community. In turn, it gives me great pride to share their achievements with you, along with the challenges we face, in this 2016 BSL Sustainable Development Summary.

## Sustainable Energy

As Queensland's largest user of electricity, securing competitive electricity prices is critical to BSL's future. Our metal trades in an international market and the price is set internationally, irrespective of how much it costs us to produce aluminium in Australia.

BSL has historically purchased around 15 per cent (150 MW) of its electricity needs from the Queensland wholesale contract market (the remaining 810 MW base load is provided through a long-term contract through the Gladstone Power Station).

In 2016, rather than commit to increasingly high electricity contract prices for its additional load, BSL decided to manage its exposure by purchasing power directly from the electricity spot market while contract negotiations continued.

Volatility in the spot market forced BSL to progressively ramp down production from mid-January 2017 and after an extended period of negotiations that started in 2015 to secure a globally competitive power contract, BSL confirmed in March 2017 it would be reducing production by 81,000 tonnes and reducing its workforce as a result.

With the abundant energy resources of central Queensland, both conventional and renewable, we believe there is a long-term future for both BSL and Queensland manufacturing in general that delivers low emissions base load power at internationally competitive prices. We are seeking to work with others who share this vision so that we can eventually restore this curtailed production.

While this report is a summary of 2016 activities, the final outcome of these negotiations in 2017 has had a material impact on our business and is noteworthy for our stakeholders.

## Keeping our People Safe

BSL continues to improve its industry-leading management systems for injury prevention at the smelter and the 2016 All Injury Frequency Rate (AIFR) of 0.35 was the second best result ever achieved in our history. Focusing on the very next task, mates looking out for mates and visible leadership are the hallmarks of our success. There is no success without safety at BSL. All work is considered in detail to ensure the safest outcome. BSL were proud to be recognised as overall winners of the 2016 Rio Tinto Chief Executive Safety Award.



## Cash Position

Despite continuing to face difficult economic conditions, it is crucial that BSL remains an efficient operation while prioritising our cost reduction program. We have had numerous drives to reduce our controllable costs and fundamentally change the way we do business.

In 2016, more than \$12.5 million in savings was delivered through business improvement initiatives. Costs were \$28 million below plan and working capital was at a record low level. For five years now, team members have been challenged to individually 'bank \$10k' annually by finding cost reduction opportunities and implementing solutions. Through this initiative, our team members have achieved more than \$30 million in savings — an incredible achievement.

## Our People

Our people are our strongest asset and their efforts are celebrated annually with the BSL Annual Service Awards and the bi-yearly General Manager Beyond 2030 Awards, where innovation and safety achievements are celebrated across the site. We foster a culture of continuous improvement, team work and recognition for good work. The result is a proud BSL workforce who are determined to be part of the Gladstone community now and into the future.

## Our Environment

BSL is now Australia's largest aluminium can recycling facility and in 2016 was proud to partner with the Endeavour Foundation in a Cash for Cans program. The Gladstone community can now collect aluminium cans for a refund at the Endeavour Foundation's Gladstone facility or donate them at collection points. The program is our largest single community investment in a decade and is a genuine win:win partnership. For BSL, we recycle cans back into primary metal at the smelter while at the same time funding Endeavour Foundation to provide steady work for 33 local people with disabilities.

Together with cans sourced from other suppliers, BSL is now recycling around 13 million cans per month which will add 2,400 tonnes of aluminium to production annually and was a proud finalist in the National Endeavour Awards and Queensland Premier's Sustainability Awards for this initiative.

## Community Complaints

BSL remains committed to maintaining open and transparent communication with its community and neighbours. We held two community forums in 2016, as well as a site visit for business and school leaders in Boyne Island and Tannum Sands.

The site continues to improve its emissions every year and it has been more than six years since the last community complaint with an impact rated 'moderate' or higher.

## Operational Performance

In 2016, BSL renewed its focus on delivering cash flow, process and resourcing improvements and efficiencies. As a result, the site achieved the highest hot metal production (584,742 tonnes) in the smelter's 34-year history with saleable tonnes 5,660 tonnes more than its previous best. In addition to this, ingot purity was outstanding and the best ever achieved, with more than 95% ingot being cast at the P0610 specification. Current Efficiency was also at a record high for Reduction Lines 1&2.

## Social Investment and Sustainability

BSL maintained a strong interface with the local community and received the *Gladstone Observer's* Best in Business award for the third consecutive year. We were also delighted to be awarded the Gladstone Observer's Innovation Award. BSL aims to contribute to the local community by providing financial and in-kind support for initiatives that demonstrate a strong commitment to sustainable development principles and educational excellence.

BSL's Building School Legacies program had a successful second year in supporting improvement projects for local Boyne Island and Tannum Sands schools. Over the past two years, the program has provided more than \$60,000 across the four local schools to support projects which provide a lasting educational benefit and legacy.

In 2016, other partnerships and sponsorships receiving much-needed BSL support were:

- Beach Arts Music
- Turtleway Artscape
- Boyne Tannum Men's Shed (BSL Community BBQ Trailer)
- Tannum Sands High School's BSL Zenith Program
- Building Legacies School Grant Program (three local schools)
- Education & Queensland Industry Partnership (EQIP)'s Business and Information Technology Skills Centre on site at BSL
- Tannum Sands Surf Life Saving Club
- Boyne Tannum Hook Up

Our 2016 detailed summary of BSL's sustainable development performance is included in this report and I trust you will find this report an informative overview of the past year's performance at BSL. I welcome any questions or feedback you may have and invite you to forward these to [bsl.info@pacificaluminium.com.au](mailto:bsl.info@pacificaluminium.com.au).

Regards

**Joe Rea**  
General Manager

# 2016 Snapshot

## Social Performance

### Our People

Full time employees

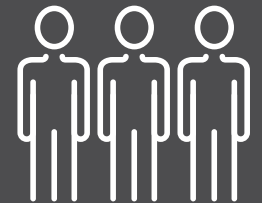
951

Contractors

66

Local Wages and benefits

\$136M



#### Celebrating our people

11,996

Services Awards - Total years' service by employees

Beyond 2030 Awards – recognising individual and team performance

2  
GM  
Awards

10 Category Award Winners (Individual or Team) - 5 Categories

Employee Engagement and Site Communication

8

Employee GM Briefing Sessions

22

General Manager Blog Posts / Video Blogs

30

BSL Hot Tappings Employee newsletter

103

Visible Leadership - cross site toolbox sessions attended by GM and Operations Manager

### Health and Safety



#### Safety Statistics

- Industry leading safety performance - All Injury Frequency Rate 0.35
- Attributable to visible leadership and focus on Critical Risk Management



#### Safety Awards

- Overall winner 2016 Rio Tinto Chief Executive Safety Award



#### Occupational Health

- 50% reduction in recorded illnesses and zero respiratory illnesses attributable to focus on reduction in exposures, personal protective equipment maintenance and a medical surveillance program



#### Employee Health and Wellbeing Campaigns

- Fitness for Work program included ergonomic risk reduction
- Fit for Life program supporting lifestyle changes
- Mental Health Awareness

### Our Communities



#### Total Investment

\$262,000



#### Partnerships

- Sponsorships and Donations
- In-kind sponsorships



#### Education

- Building School Legacies – School Grant Program
- Hosting of onsite learning centre (EBITS) through Education Queensland and Industry Partnership
- Day in the Life of (DILO) experience for high school students



#### Consultation

- 2 Community Forums providing 2-way communication
- Community Observations – more than 6 years since last moderate or higher community complaint

# Business Performance

## Operational

Number of aluminium reduction cells

# 749

- Record saleable metal production - year on year increase to 584,742t
- Record metal purity
- Record current efficiency for Reduction Lines 1/2

## Financial



- Cash Position \$28M below plan with working capital at record low
- 2016 cost saving initiatives delivered savings of \$12.5M in ideas contributed by employees in site wide '10K Banked' initiative

## Awards



**Gladstone Observer Best in Business Award** – 3rd consecutive year  
**Gladstone Observer Innovation Award**

# Environmental Performance

## Environmental Incidents / Compliance



- **66% reduction** in environmental violations with only 2 category 1 incidents recorded (confined to site with prompt and reversible impact)
- Results attributable to
  - a dedicated focus team working on particulate reduction
  - application of Lean Manufacturing Jidoka principles on water management to identify root cause of problems and assist pathways to excellence

## Emissions

- **Fluoride** – additional anode changes in Reduction Line 3 resulted in a marginal increase in fluoride results compared to 2015; however, they were below licence limit
- **Waste to landfill** – increased waste to landfill due to carbon dusting in Reduction Line 3 and site refractory replacement
- **Benzo[a]pyrene (BaP)** – 50% reduction on 2015 result due to operation of bake furnaces and transfer of efficiencies to the new carbon bake furnace

# Sustainability

## Sustainable Energy



- 2016 required ongoing negotiations to secure long-term internationally competitive power contract
- Power sourced from Queensland electricity grid spot market – modulation of power usage to reduce consumption

## Critical Projects



### Building Future Potential

To progress the plant beyond 2030 a number of critical projects with an intensive focus were progressed to deliver sustainable cash flow improvements.

### Cash for Cans

Aluminium can recycling facility – commissioned in 2016 and processes approximately 13M cans (200t) per month. Finalist in National Endeavour Awards and 2016 Queensland Premier's Sustainability Awards.

### S230 Larger Anode

Increasing the anode size in the Line 1/2 reduction cells was identified as a proven pathway to improve current efficiency.

### Anode Assembly Voltage Drop

A significant area for improvement that will lead to large savings on the reduction lines. Reduction of voltage drop of the carbon anode reduces the power input into the reduction cell, thereby reducing the costs to produce metal.

### Automated Line 1/2 Pallet Station

Improved safety and resource efficiencies through the removal of manual labour to attach carbon anodes onto the overhead conveyor 5,600 times per week.

### In-house Vac Truck

Improvement initiative to insource work of the vacuum truck to contribute to delivery of significant cash flow improvements 2017 onwards.

### Single Person Tapping

Introduction of an automated process for metal tapping to reduce the resources required and minimise manual intervention while improving reliability on aluminium tapping cycle time.

# 2016 Data Book

KEY REPORTING AREA	2014 Actual	2015 Target	2015 Actual	2016 Target	2016 Actual	2017 Target
<b>BUSINESS PERFORMANCE</b>						
Number of Reduction Cells	749	-	749	-	749	628
Saleable Metal Production	553,039t	584,720t	579,082t	583,978t	584,742t	514,132t
<b>SAFETY</b>						
All Injury Frequency Rate*	0.08	0.33	0.49	0.41	0.35	0.30
Lost Time Injury Frequency Rate	0.08	n/a	0.25	n/a	0.26	n/a
Lost Time Injuries	0	n/a	3	n/a	3	n/a
Recordable Injuries **	1	4	6	5	4	3
<b>HEALTH</b>						
New Occupational Illness***	1	0	4	0	2	0
<b>COMMUNITY OBSERVATIONS / COMPLAINTS</b>						
Category 0 (observation) (general feedback, enquiries and minor issues)	13	0	7	0	5	0
Category 1 Complaints (minor impact to the community)	1	0	0	0	0	0
Category 2 Complaints (moderate impact to community and environment)	0	0	0	0	0	0
Category 3 Complaints (serious impact to community and environment)	0	0	0	0	0	0
Total Investment	\$330,244	\$300,000	\$308,415	\$270,500	\$274,000	\$262,000
Partnerships	\$82,500	\$60,000	\$61,400	\$15,000	\$16,000	\$15,000
Building School Legacies – School Grants	\$20,000	\$30,000	\$28,000	\$29,000	\$15,000	\$15,000
Sponsorships and Donations	\$26,144	\$10,000	\$10,515	\$16,500	\$33,800	\$20,000
In-kind	\$201,600	\$200,000	\$208,500	\$210,000	\$210,000	\$210,000



▲ 1%

**Business Performance:**  
Saleable Metal  
Production



▼ 28%

**Safety:**  
All Injury  
Frequency Rate



▼ 50%

**Health:**  
New Occupational  
Illness

KEY REPORTING AREA INFORMATION: \* The All Injury Frequency Rate (AIFR) converts the numbers of recordable injuries into a number that enables comparison of our safety performance against previous years, as well as with other Pacific Aluminium operations in Australia and New Zealand. \*\* Pacific Aluminium uses the globally recognised "Occupational Safety and Health Administration: (OSHA) guidelines for injury classification which defines a Recordable Injury as any work-related injury that either needs treatment by a doctor, over and above general first aid, prevents a person from performing all of the duties of their role on their next given shift or prevents a person from returning to site on their next rostered shift. \*\*\* An occupational illness is defined as an illness or disease that results from workplace exposure and lasts more than one shift.

KEY REPORTING AREA	2014 Actual	2015 Target	2015 Actual	2016 Target	2016 Actual	2017 Target
<b>ENVIRONMENT</b>						
Environmental Incidents Category 1 (on site near source confined and promptly reversible impact typically a shift/off site not applicable)	4	0	7	0	2	0
Environmental Incidents Category 2 (on site near source confined and short-term reversible impact/off site near source confined and promptly reversible impact)	4	0	1	0	0	0
Environmental Incidents Category 3 (on site near source confined and medium-term recovery impact/off site near source confined and short-term reversible impact)	0	0	0	0	0	0
Non-compliance with Licence Conditions	1	0	8	0	2	0
Fresh Water Use (ML) (Raw + Treated)	839	845	828	845	811	845
Water Recycled (ML)	156	155	171	155	168	155
Fluoride Emissions (kg F/t Al, 12-month rolling average)**	0.70	0.80	0.65	0.80	0.68	0.80
Benzo[a]pyrene (BaP) (kg/year) +Licence condition commenced in 2013	24	50	14	50	6.7	50
Total Waste to On-site Hazardous Landfill and Transfer Station	1,100t	1,121t	1,076t	1,068t	1,607t	1,244t
Onsite Greenhouse Gas Emissions (Scope 1)# Mt CO <sub>2</sub> -e	0.99	n/a	1.03	1.01	1.06	1.01
Greenhouse Gas Emissions associated with Purchased Electricity (Scope 2)## Mt CO <sub>2</sub> -e	6.65	n/a	6.78	n/a	6.62	n/a
Total Greenhouse Gas Emissions Mt CO <sub>2</sub> -e	7.64	7.72	7.81	n/a	7.68	n/a
<b>HUMAN RESOURCES</b>						
Full Time Employees ^	959	951	953	944	950.6	932
Contractors (number of full time equivalent contractors, not including capital contractors)	113	73	111	70	66.39	70
Developing Roles (graduates, apprentices & trainees)	37	0	32	n/a	22	30
Indigenous Employment %	2%	n/a	2%	3%	2%	3%
Local Wages and Benefits (million \$)	\$143.4	\$138.9	\$139.1	\$138.5	\$136.3	\$139.5



▼ 28%

**Community:  
Observations  
and Incidents**



▼ 75%

**Environment:  
Total Environmental  
Incidents**



▲ 40%

**Human Resources:  
Contractor  
Usage**

+ Licence limit set by Department of Environment and Heritage Protection. \*\* Targets are internal only. # Scope 1 – Greenhouse gas emissions as a result of onsite activities. ## Scope 2 – Greenhouse gas emissions from consumption of purchased electricity. Emissions are calculated taking the electricity MWh used on site multiplied by a default Queensland emissions factor. The reduction in Scope 2 emissions since 2011 is mostly due to the decrease in the Queensland emission factor. ^ Full time equivalent is the average of all full time and part time employees. \* Fire which occurred during dismantling of equipment in the decommissioned carbon bake furnace.

The 16 winning entries for the 2016 'Go Home Safe' campaign.



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We welcome your feedback on any aspect of our performance or reporting.

Please send your comments to [bsl.info@pacificaluminium.com.au](mailto:bsl.info@pacificaluminium.com.au) or write to:

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Images by Bob Trask Photography