



alcoa australia rolled products at yennora
sustainability profile including environment improvement plan

2006 - 2007

06-07

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introduction from location manager

Since Alcoa Australia Rolled Products was formed in 2003, the plant at Yennora has taken a number of steps to embed sustainability principles into our business to ensure our ongoing business success. This is part of our broader ambition to be the best neighbour in Western Sydney by being a good employer, spending money in the local economy, ensuring that we care for the local and state environment, and being open, transparent and consultative with local community members.

At Yennora, our business is recycling aluminium. We are distinguished by what we produce – finished aluminium products such as cansheet and foil. Aluminium is different to many metals in one important respect - it is endlessly recyclable.

Environmental performance and management is critical to our business sustainability. Our commitment to ever improving environmental performance and management is reflected in the targets we have set ourselves for 2006-07 above and beyond meeting regulatory requirements. We have committed to targets that we control through our management processes at Yennora and the environmental impacts arising from this. These include targets to reduce our water usage, continuous improvement in managing waste and air emissions from the site, and ensuring that our transport movements continue to have minimal health, noise and transport impacts on our Yennora neighbours.

For environmental gains to become truly sustainable, we have to think about what they mean for our local community and economy. Our environmental impacts have important implications for the health and safety of our employees and neighbours, but being a good neighbour also means being an open and accountable business.

In 2005, we formalised mechanisms to share information with our neighbours and allow those affected by our business presence to raise their interests with us through the establishment of the Community Consultation Network (CCN). CCN members have given their personal time to be a part of this network. I would like to thank all members for their involvement and invaluable input into this process.

Following an extensive consultation process, the CCN has provided invaluable input into the development of this document, identifying issues for which they need clearer information, and areas of environmental performance for which they wanted to see targets set for the 2006-07 period. The Environment Improvement Plan will be revised every two years, and this will include an analysis against the targets we have set for 2006-07 and set new targets.

While we can control our performance against specified targets, there are broader issues that affect our business, and our business affects. One of these is the level of aluminium recycling by Australians generally. We engage in partnerships with organisations that have expertise in promoting understanding of the general public in the importance of recycling, and importantly, improving the practicality of recycling for the public.

I hope that you find this document useful. I look forward to your feedback and working with you to reach our sustainability goals at Yennora.



John Costley
Location Manager

alcoa and sustainability

Alcoa has established a globally recognised reputation for environmental stewardship and corporate responsibility. We define sustainability as using our values to build financial and broader economic success, environmental excellence and social responsibility through partnerships to deliver net long-term benefits to our employees, customers, suppliers and the communities in which we operate.

The integration of sustainability into our business is achieved through strong governance and corporate values and a global sustainability model.

In Australia, we have also developed a sustainability framework that sets out our key sustainability objectives:

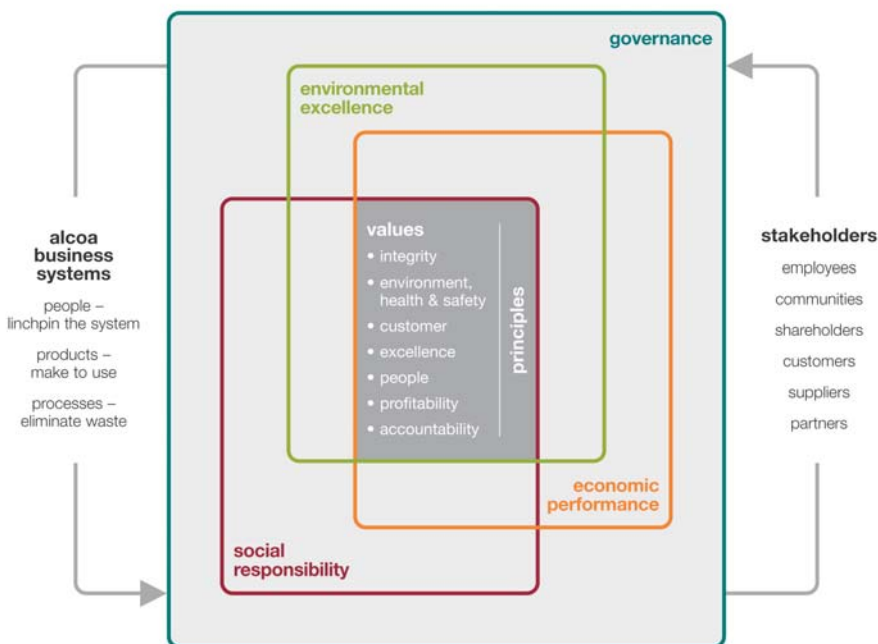
- Delivering long term economic benefit
- Accountability
- Creating technology
- Practicing product stewardship (see glossary)
- Stakeholder engagement
- Meeting the needs of current and future generations
- Building communities
- Respecting people
- Efficient resource use
- Cleaner production
- Ecological integrity and biodiversity

Alcoa of Australia Limited has its headquarters in Perth and has established a world-class integrated aluminium industry in Australia. Its primary focus as an alumina and aluminium producer is complemented by Alcoa Australia Rolled Products which manufactures and markets rolled products. Alcoa Wheel Products Australia and Alcoa Fastening Systems Australia are Australian distribution centres for aluminium truck wheels and fastening systems.

Alcoa mines bauxite at Huntly and Willowdale in the Darling Ranges in Western Australia to supply its refineries at Kwinana, Pinjarra and Wagerup. Alcoa owns and operates two port facilities at Kwinana and Bunbury as well as 20% of the Dampier Bunbury Pipeline which transports natural gas from the north-west shelf to the south-west of WA.

In Victoria the company produces aluminium from two smelters at Point Henry in Geelong and Portland in South West Victoria. (Alcoa owns the Point Henry smelter and is the operator of the Portland Aluminium Smelter, in which it has a 55% interest.) The company also operates a brown coal mine and power station at Anglesea to supply power to the Point Henry smelter.

Alcoa has a workforce of about 7,500 employees and contractors in Australia.



alcoa's economic contribution to new south wales

Alcoa Australia Rolled Products is the largest supplier of aluminium rolled products to the Australian market and operates Australia's only aluminium rolling mills at Yennora in Western Sydney and Point Henry in Geelong. The site has operated at Yennora for more than 40 years and as a part of the Alcoa family of companies since 1996.

Alcoa Australia Rolled Products was formed in January 1996 as a partnership venture between Kobe Steel Japan and Alcoa Inc. It was originally named Kaal Australia. On 1 October 2003, Alcoa Inc acquired the Australian operations of this partnership and renamed the business Alcoa Australia Rolled Products.

Alcoa Australia Rolled Products is the largest aluminium recycler in Australia and produces all of Australia's domestic beverage can sheet as well as common alloy aluminium sheet and coil products and aluminium foil.

Alcoa Australia Rolled Products at Yennora has an average annual spend of \$90 million. More than 50% of Alcoa Australia Rolled Products' products are exported, mainly to Asia. The value of total exports for Alcoa Australia Rolled Products in 2004 was \$306 million and total spending in Australia by the company's two rolling mills is approximately \$180 million each year. Alcoa Australia Rolled Products employs 770 people, with around 350 of those employed directly at the Yennora rolling mill. At Yennora, the payroll is approximately \$26 million each year.

We work closely with our suppliers to ensure they meet our environmental health and safety requirements.

Alcoa Australia Rolled Products Operations

The Yennora and Point Henry rolling mills have a combined annual production capacity of more than 200,000 tonnes. The mills are capable of producing world class finished goods which include:

- Aluminium beverage cansheet products, including bodystock, tabstock and endstock.
- Aluminium foil for insulation, recyclable containers, and thin foil for packaging for the pharmaceutical industry
- General sheet and coil which is used in a number of various end products being made including:
 - Road signs
 - Licence plates
 - Solar hot water services
 - Small and large boats
 - Caravans

“ Alcoa Australia Rolled Products is the largest aluminium recycler in Australia “



alcoa's environmental commitment to new south wales

Environmental management is of the highest priority for Alcoa in all aspects of our operations. It is Alcoa's policy to operate worldwide in a safe, responsible manner that respects the environment and the health of our employees, our customers and the communities where we operate. We will not compromise environmental, health or safety values for profit or production.

Environmental Management

Alcoa has an excellent track record in environmental management and we will continue to focus on developing better ways to ensure a sustainable future. We are committed to using less resources, reducing our emissions and wastes and reusing and recycling materials. Waste minimisation and cleaner production programs at all our operations keep raw materials in an operating system and out of the waste stream thereby helping to reduce costs and better manage the environment. This includes processing of materials such as dross, a by-product of the aluminium remelting process.

At Yennora, our corporate values and objectives mean that we are always seeking to improve our performance beyond regulatory requirements. We do this by continually evaluating our performance, particularly around air emissions, energy efficiency, water and storm water management and hazardous waste management. Our environmental commitment is a source of business innovation and we work through partnerships, such as with the Sydney Water's Every Drop Counts program to improve our use of valuable resources and ensure that we are minimising our environmental footprint.

Alcoa continues to reduce waste to landfill through the integration of sound waste management and cleaner production initiatives into its operations. In 2004 waste to landfill was 7.9 percent of total waste generated by the Yennora site. Recycling rates at Yennora are very high, as everything is recycled except mixed hazardous waste, building waste, lime dust and general waste. Targets have been set to continuously reduce waste to landfill.

While the operations at Yennora operate within our strict NSW Environmental Protection Authority (EPA) Licence, our corporate values and objectives mean that we are always seeking to improve our performance beyond these basic requirements.

Environmental Partnership

Every Drop Counts: Sydney Water Partnership

In 2003, Alcoa Australia Rolled Products at Yennora partnered Sydney Water's 'Every Drop Counts' program which included water audit activities to help the plant improve management of water use in different production activities. The plant adopted a number of Sydney Water's recommendations, and is exploring a range of measures to achieve continuous improvement including rainwater and storage collection, and water usage. Alcoa Australia Rolled Products at Yennora has realised good progress in improving water usage at the Ingot Mill over the past 18 months and is continuing to look for improvements in this area. In planned improvements for the 2006-7 period, Alcoa Australia Rolled Products at Yennora is also evaluating options for the cooling tower at the Ingot Mill. Plans to rebuild the cooling tower in the Ingot Mill are already underway and anticipated water savings will be an integral part of the design of this facility. The facility will use best commercially available technology and we anticipate these improvements will contribute to further reductions in water usage for 2006-7.

Recycling

Key to ever improving environmental impact is creating environmental awareness – and community demand for recycling – in our community at Yennora, and our broader community of Western Sydney and NSW. Key Alcoa partnerships to promote environmental education and awareness include Clean Up Australia and Keep Australia Beautiful in the Sydney area.

Alcoa is distinguished by what we produce – aluminium and the life cycle implications of aluminium are unique as aluminium is endlessly recyclable.

Alcoa Australia Rolled Products operates Australia's largest recycling facility in Australia at Yennora in Western Sydney. Of the 3 billion aluminium cans sold annually in Australia 63.4 percent (Australian Can Group statistics for 2003), or approximately 1.9 billion, are recycled. Alcoa Australia Rolled

Products at Yennora and Point Henry, near Geelong in Victoria processes more than 440 million of these cans annually through its remelt furnace, playing a significant role in reducing industry requirements for natural resources and diverting waste from landfill. Increased rates of recycling are good for the environment, communities and for business. Metal sourced from recycled cans requires only five percent of the energy needed to mine, refine and smelt primary aluminium (excluding transport energy).

Alcoa Australia Rolled Products has a strong commitment to promoting recycling activities – it is good for business and good for the environment. A key element of our strategy is to develop partnerships with organisations committed to create demand for, and the means to recycle. Alcoa is piloting a recycling model in the Holroyd and Fairfield areas with Clean Up Australia which can be applied across schools to benefit both school management and provide learning experiences for primary school children.



Clean Up Australia Partnership

Alcoa's Anglesea site achieved a reduction of 65% waste to landfill from 2000-2004. One aspect of this strategy was the Triple Bin System, set up by Alcoa Anglesea's Environment and Civil Maintenance Team and is a system of colour coded bins for separation of all waste streams. Each waste stream had a designated colour and waste is separated at the source. As a result materials can either be recycled or reused, with the remainder (a small amount) going to landfill.

Following this success, the site partnered with Anglesea Primary School to pilot the system there. Early results show that the school saved up to one third of its waste management costs in implementing the system. Building on this example, Alcoa Australia Rolled Products at Yennora, supported by the Alcoa Foundation is in partnership with Clean Up Australia to pilot the Triple Bin System (3BS) at local primary schools in Western Sydney.

Following the pilot phase, it is intended to be made available to other NSW primary schools. The project aims are to educate children in primary schools around waste management and recycling, and encourage schools to actively engage in waste management and recycling education programs. This project will be piloted in Victoria in 2006.



"PHOTOS COURTESY OF VAL ANASCO PHOTOGRAPHY".

Climate Change

Based on available evidence, Alcoa has concluded that greenhouse gas emissions from human activities affect climate. We also recognise that the risk of significant climate change is an issue of vital importance that requires action.

Globally Alcoa has voluntarily taken a leadership position on addressing greenhouse gases. We have committed to reducing our global direct greenhouse gas emissions by 25 percent by 2010 from a base year of 1990 and have a global strategy to reduce fossil fuel dependence. In 2003 Alcoa achieved the 25 percent reduction and is now working to maintain that reduction as the company expands.

Aluminium has the potential to be part of the climate change solution through its use in the transportation sector. Aluminium is strong and yet extremely lightweight and its use in motor vehicles offers improved performance and fuel efficiency which can deliver benefits to the environment, communities and business. Every kilogram of aluminium used in a car saves 20 kilograms of greenhouse gas emissions over the life of the vehicle. Aluminium gives carmakers a bigger envelope in fuel efficiency, size, performance, safety and recyclability.

With global projections for the use of aluminium in cars and trucks, aluminium will increasingly become part of the

global climate change solution and the industry will be able to reach a climate neutral state by 2017. This means that the global warming impacts of aluminium production will be fully offset by the amount of carbon dioxide emissions saved by the use of aluminium in the transportation industry.

With strong corporate commitments to improved greenhouse gas performance, Alcoa in NSW consistently pursues energy efficiency opportunities through improvements in production processes.

alcoa's social contribution to new south wales

adding value to community

Alcoa aspires to be the best company in the world and that means starting with a focus at home by being the best neighbour in Western Sydney. This has two broad aspects to it:

- First, that we are accountable to our communities and that we have mechanisms to achieve this. We realise this through the establishment and ongoing work with the Community Consultation Network.
- Second, that our operations add value to our community through our business activities and through our ability to create opportunity and build capacity in the community. We achieve this through our employees, through our "Partnering Stronger Community" programs and through strategic use of Alcoa Foundation resources.

Alcoa Australia Rolled Products at Yennora recognises the close relationship between sustainable business, economic, social and environmental performance. We are committed to ensure

that our business activities contribute to broader community sustainability, and this is reflected in our commitment to economic, social and environmental performance.

Accountability to Community: Consultation

We are committed to working with the community to identify opportunities for future development that will ensure the vibrancy of the community and have established a Community Consultation Network (CCN) to aid ongoing, two-way communication and consultation with the communities where Alcoa operates. The CCN is made up of interested community members. The group meets regularly to discuss a range of issues of importance to the community.

The Environment Improvement Plan (EIP) will form an essential part of business plans for Alcoa Australia Rolled Products' Yennora operation, by providing a public commitment to continual improvement in environmental performance.

An EIP details current environmental improvement initiatives and targets, outlines improvements accomplished in the past, explains the operating environment and gives information on the site's environment, health and safety systems of management.

Broad community consultation is an integral part of the Environment Improvement Plan process. Community representatives sign-off on the plans which are then public records of the organisation and the community's partnership on environmental improvement.

Our Employees

Our employees live and work in the communities in which we operate and they provide us with a direct link to the community. We recognise that our people are our most vital resource; they are the key to how well we do business. We recognise and appreciate the dedication our employees have shown us, and have very low turnover rates – over 80 % of employees working for Alcoa in Australia have done so for more than 10 years.



Health and Safety

Because people are the key to Alcoa's performance, the company is constantly applying tighter criteria to improve employees' health and wellbeing. Our goal is zero injuries.

It is Alcoa's policy to operate in a safe, responsible manner which respects the environment and the health of our employees, our customers and the communities where we operate. We will not compromise environmental, health or safety values for profit or production. Each site has its own health and safety policy which is provided in this document.

International benchmarking studies confirm that we have strong systems and processes to manage health and safety. These drive steady improvements in performance, but we recognise that further initiatives are needed to achieve our ultimate goal of zero

workplace injuries. Alcoa Australia Rolled Products recorded a lost workday rate of 0.486 in 2004, compared to 0.242 in 2003. This compares to the manufacturing industry rate of 4.62 in NSW for 2002-2003 (figure based on Alcoa reporting method using WorkCover statistics). A lost work day injury refers to an injury where time off is required. The lost work day rate is calculated as the number of lost work day injuries for each hour worked at the site. The jobs that gave rise to these injuries were reviewed and equipment and procedures modified. Both Alcoa Australia Rolled Products sites will now implement more aggressive risk programs during 2006-07 to prevent future injuries and to continue to focus on behaviour based employee observation programs. Our goal is zero injuries.

Diversity

Alcoa Australia Rolled Products' site at Yennora is shaped by our people. Many have given years of service: the average length of service is 16 years and the average employee is 48 years of age. By having such a stable workforce, Alcoa Australia Rolled Products has been able to develop strong corporate knowledge and an excellent basis to provide opportunities for young people in the Western Sydney region.

Alcoa Australia Rolled Products' site at Yennora in Western Sydney employs representatives from over forty-five different countries. The diversity and ethnicity of the workforce has brought many benefits to Yennora's workplace and is a great source of company pride.

In 2005, Alcoa Australia Rolled Products involved employees in community relations decisions and has committed to establish the 'Alcoa in the Community Committee'. Employees are key business stakeholders and members of the Western Sydney community. These committees of employees provide greater openness, employee ownership and diverse input into decisions about Alcoa's partnership activities and Alcoa Foundation grants.



Training and Education

Alcoa Australia Rolled Products at Yennora provides employment opportunities in high engineering trades. In 2005, the site employed a number of adult apprentices. We offer opportunities for apprentices to extend their career options through support for ongoing university and other tertiary training opportunities.

Alcoa Australia Rolled Products at Yennora has an ongoing relationship with UNSW to provide scholarships for metallurgy students and vocational internships for mechanical and electrical engineering students. The site also supports vocational education and training for secondary school students in the areas of business services, IT, and metal and engineering.

At the primary school level, educational tours focusing on recycling and environmental awareness are provided, along side educational partnerships with organisations such as Clean Up Australia.

Volunteers

Volunteers underpin stronger communities. Within Alcoa there are hundreds of community volunteers who are acutely aware of this – particularly in some of the more isolated areas where their efforts can form the basis for a community's essential emergency services such as the CFA or Surf Life Saving Clubs. Alcoa supports and rewards employees who volunteer within the community through the Alcoa Foundation's ACTION and Bravo! programs.

ACTION (Alcoans Coming Together in Our Neighbourhoods) is a program that has been developed by the

Alcoa Foundation to recognise the collective efforts of Alcoa employees in communities where they live and work. The Foundation rewards initiatives where 10 or more Alcoa employees choose to volunteer their time working together on a special community project. The Alcoa Foundation supports each ACTION activity with a US\$3000 grant – paid directly to the community organisation for their use.

Bravo! recognises Alcoa employees who already volunteer within community organisations. Alcoa volunteers can nominate community organisations for a Bravo! grant every year if they have devoted 50 or more personal hours to the community organisation. The Alcoa Foundation recognises the efforts of each Alcoa employee with a US\$250 grant to the volunteer's community organisation.



VOLUNTEERS RAISED OVER \$5,000 AT THE 2005 OPEN DAY



VOLUNTEERS AT THE CABRAMATTA PCYC

ACTION in Cabramatta

Alcoa volunteers rallied their efforts to support the Cabramatta Police Citizen's Youth Club (PCYC) to host a hip-hop competition. The PCYC provides the community's youth a safe environment to participate in various sporting and social activities. Alcoa Australia Rolled Products Yennora helped to set up and run the Hip Hop and Break dancing competition and BBQ for the participants and their supporters. The club manager, Senior Constable Sam Cognetta said the time and financial support that the event generated was great and would help local youth develop their full potential.

Alcoa Foundation

The Alcoa Foundation is a global resource that actively invests in the quality of life in Alcoa communities worldwide. With around AUD\$700 million invested since its inception in 1952, the Alcoa Foundation has positioned itself as a source of positive change and community enhancement.

The Alcoa Foundation assists Australian communities in two main areas:

- Awarding grants to non-profit organisations in accordance with the Areas of Excellence that support sustainability, workforce development, community health, safety and non-profit effectiveness.
- Encouraging employee engagement (volunteering) through two programs – ACTION and Bravo! The Alcoa Foundation recognises the important role of volunteering in strengthening communities by providing essential services as well as networks and community spirit. The Alcoa Foundation allows Alcoa to recognise the enormous contribution our employees make to local communities and encourage those not involved in volunteering to participate.

ACTION and Bravo! link the Alcoa Foundation to representatives from all community sectors through relationships that have already been forged through the volunteering efforts of our employees. The program recognizes that employees and the community organizations are best placed to identify local issues and areas that require financial support, human support or both. The programs are designed to encourage volunteers to develop their own strategies and make their own policy decisions suited to their individual interests and community needs.

Partnering Stronger Communities

It is our aim to ensure the communities where Alcoa operates have networks that create opportunities for people, institutions and business to participate more fully in the economic, social and cultural areas of that community. Stronger communities lead to the development of productive partnerships, the integration and coordination of services, local solutions to local problems and

to the creation of a more positive future. The Partnering Stronger Community program works by:

- Helping communities to find solutions through joint projects.
- Providing in kind support and volunteers rather than simply offering financial support.
- Focusing on a shared commitment to making local communities stronger and a better place to live and work.

ALCOA'S COMMUNITY PARTNERS
AT COMMUNITIES IN CONTROL
CONFERENCE, MELBOURNE, JUNE 2005



Partnering Stronger Communities recognises diversity and the complexity of opportunity for communities and can build capacity across a range of issues that are important to communities in New South Wales. These include:

Volunteers for Life

Alcoa has teamed with two not-for-profit organisations, Charities Aid Foundation (CAF), and SEAL Force to create the Timehelp program, an innovative social initiative matching community needs with the spare time of retirees in the Geelong region. Retirees from Alcoa's Point Henry operations have formed the Timehelp Alcoa team. These volunteers give their time in schools across the Geelong region assisting with a variety of activities including reading, and craft and cooking classes, ensuring that their unique skills are not lost for the community. Following the initial results in Geelong, we are also exploring options to extend the program to NSW, working with the Yennora plant in Western Sydney.

Future Leaders of Industry

Alcoa maintains its approach to recognising and rewarding young people in the education system through its scholarships and awards program. Because diversity is central to our strength as a company, we are committed to ensuring that access to science, engineering, technology, and business training is available to all. Alcoa's specific support is directed towards areas that recognise and reward leadership, diversity and equality.

Since the formation of the company, Alcoa Australia Rolled Products has funded UNSW Co-op Scholarships for metallurgy. This is a five year scholarship program during which scholarship recipients undertake a total of 18 months of direct industry experience over the course of their studies. By funding the program, Alcoa Australia Rolled Products contributes to building the strength of the metallurgical skills base in Australia, and students have the opportunity to work with Alcoa and move into permanent employment at the end of their studies.

Environment and Conservation

Alcoa's environmental partnerships programs have been evolving in response to community change and national priorities. Alcoa seeks to remain at the forefront responding to emerging community-led initiatives in the broader environmental field. These recognise the importance of broader sustainability concepts and the importance of nurturing local communities to take leadership in managing environmental initiatives.



CLEAN UP BUSINESS DAY AT PLANT

Alcoa's Evolving Environmental Partnerships

Alcoa formalized its commitment to the national landcare effort in 1989 when the Alcoa Landcare Project was launched in Western Australia and in Victoria in 1991. The project has been instrumental in forging strong working relationships between industry, government, and individuals in the community in addressing priority environmental issues.

In December 2003 Alcoa was the National Winner of a Prime Minister's Award for Excellence in Community Business Partnerships for its 21-year-long partnership with Greening Australia. The partnership has contributed in a practical way to repair the Australian landscape by planting over 12 million trees in Victoria through the Alcoa Revegetation Assistance Scheme.

Alcoa has committed over \$21 million to community, environmental and landcare projects over the last 20 years.

Alcoa's environmental partnerships programs have been evolving in response to community change and national priorities as environmental awareness and imperatives have developed. Alcoa seeks to remain at the forefront responding to emerging community-led initiatives in the broader environmental field.



YENNORA ACTION STATION CLEAN UP SUPPORTING KEEP AUSTRALIA BEAUTIFUL. THE DAY WAS ALSO SUPPORTED BY YENNORA PRIMARY SCHOOL.

An Alcoa Australia Rolled Products sponsored Metro Pride program - launched by KAB - Sustainable Cities recognises outstanding environmental initiatives whilst raising public awareness of a range of environmental issues affecting metropolitan NSW.

The Metro Pride program (Tidy Towns comes to the City) acknowledges the work Councils, Community Groups, Schools and committed individuals place into improving their urban environment. The projects carried out not only improve the environment but also improve the standard of living and quality of life for urban communities.

The Metro Pride award is presented each year alongside a number of sponsored awards covering issues such as urban wildlife, waste and sustainable communities and inspires the community to make a genuine and lasting contribution to their area by working in partnership with local government and businesses.

In 2004, the KAB's Metro Pride winner was the Blue Mountains Council. Parramatta City Council was the Overall Winner of the Alcoa Australia Western Sydney Individual or Group Community Action Award, for its Community Lawn Mowing Service, reflecting a strong partnership between local community, government and business. In 2005, the programme was renamed the Sustainable Cities program.

Sustainable Communities

Education is one of the keys to achieving sustainability. With this in mind, Yennora has focused on schools in the local area in partnering with Clean Up Australia's Triple Bin Challenge. The Challenge was launched at Sherwood Grange Primary School at Merrylands.

Alcoa Australia Rolled Products has a long standing partnership with Keep Australia Beautiful (KAB) and has supported a number of KAB programs including:

The KAB Clean Beach Challenge is a highly coveted award in NSW, recognising the conservation and regeneration of one of NSW's greatest assets; it's beautiful coastline. Alcoa Australia Rolled Products sponsors the Products Litter Prevention Awards. Being involved in the awards is not only a great partnership with KAB, but a fantastic way to promote our own environmental ethos to the community and to contribute to the preservation of one of NSW' greatest assets. The Clean Beach Challenge involves many communities in NSW and consistently helps protect, preserve and enhance beach environments.

Safe and Healthy Children and Families

Because people are the key to Alcoa's performance, the company is constantly applying tighter criteria to improve employees' health and wellbeing. In early 2004, Alcoa Australia Rolled Products at Yennora conducted a survey of employees at the site to understand their views on smoking in the workplace. The survey found that:

- Around 22 percent of employees were smokers, and of these, 65 percent wished to quit smoking and would be keen to take place in a smoking cessation program, and
- A large proportion of non smokers felt that passive smoking was an issue, and moving smoking out of the workplace was a positive step

As employees had expressed a strong interest in smoking in the workplace, an employee committee on smoking cessation was formed to gather information on possible programs, with input from some smokers on site. Three options identified by the committee were Nicobate Replacement Therapy, Hypnotherapy and Nicobrevin. Alcoa Australia Rolled Products made contact with a local pharmacy to discuss the program. The pharmacy approached Pfizer to advise them of the Alcoa Australia Rolled Products initiative and Pfizer came on board as a program sponsor and to assist in understanding the smoking habits of employees. Following this exploratory stage, another survey indicated that 80 percent of smokers indicated a desire

to quit smoking. This increased from the earlier study.

When the implementation plan was being finalised, Alcoa Australia Rolled Products and Pfizer contacted the Woolcott Institute who agreed to provide the smoking cessation "how to" and also provide ongoing counselling as part of the smoking cessation initiative. Implementation has made all buildings smoke free and smoking is now only permitted in designated smoking areas on site.

ENVIRONMENTAL EDUCATION AND PUBLIC TOURS

Alcoa Australia Rolled Products at Yennora has conducted industry tours since 1996. These tours focus on showing how aluminium is recycled and the rolling facilities that make sheet, coil and foil.

We also provide tours to primary schools. These focus on recycling and environmental awareness together with a broad understanding of how aluminium is made and recycled. These tours have proved popular with both teachers and students.

Alcoa Australia Rolled Products Yennora operations is committed to continuing industry and school tours, regular open days, and participation in community initiatives such as tree planting. It is through participating in community initiatives, volunteering and providing accessible information that we will achieve on-going two-way communication about environmental performance and management, thereby continually improving what we do and how we do it.

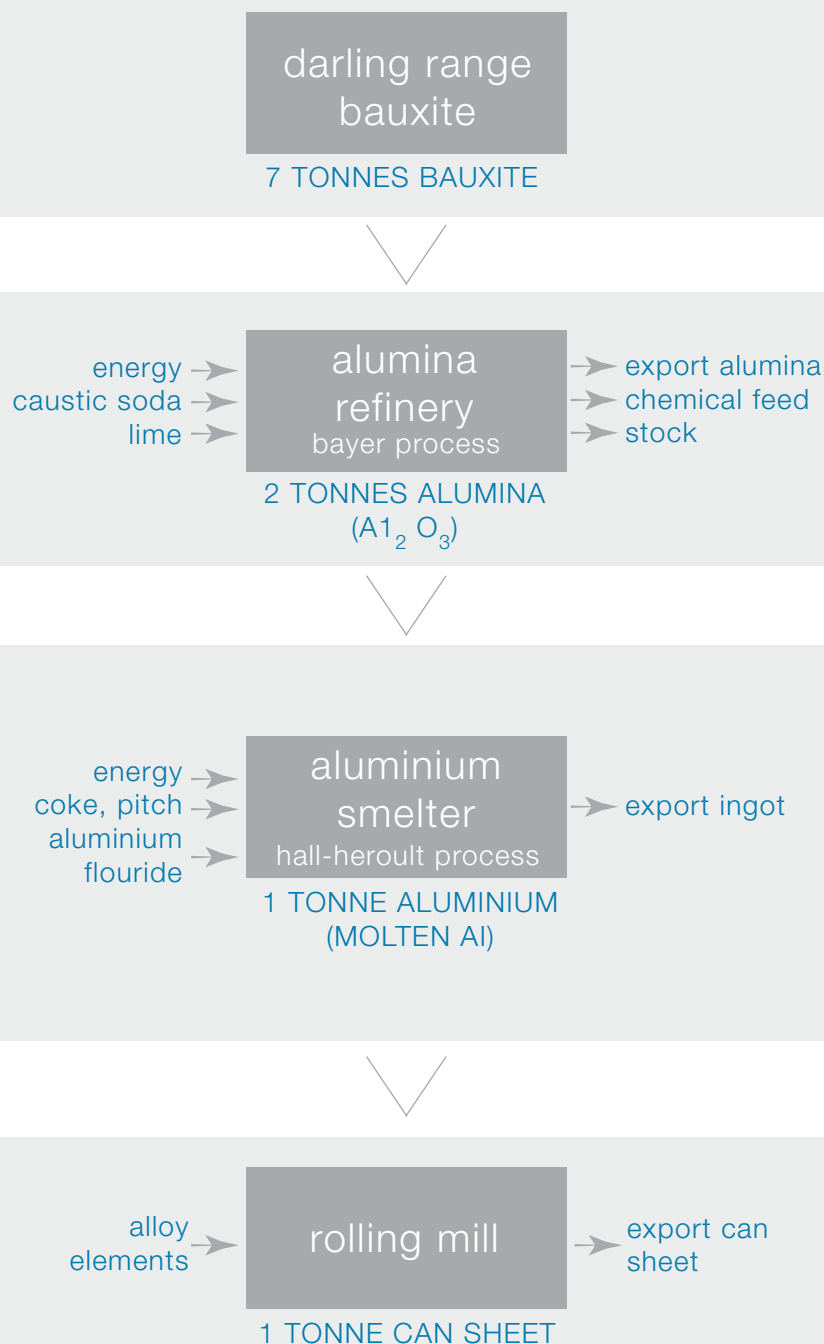
Information for teachers and students on how aluminium is made can be found at http://www.alcoa.com/australia/en/alcoa_australia/dirt.asp

If you want to arrange a tour please contact Keith Gover (02) 9681 9351



from dirt to aluminium: how aluminium is made

Bauxite to Aluminium



Aluminium is produced today in the same way that it was first produced over one hundred years ago and it all starts with dirt. A type of dirt known as 'Bauxite Ore'. When it's dug out of the ground at mines in Western Australia, it looks like little more than a load of gravel.

The dirt is then ground up and mixed with chemicals known as lime and caustic soda. The mixture is then pumped into high-pressure containers and heated. Reactions then take place, with the end result being a white powder known as alumina. Alumina is made at Alcoa's Alumina refineries in Western Australia and is then transported by ship to the aluminium smelters in Geelong and Portland in Victoria.

At Point Henry and Portland, alumina is put through another chemical process to become aluminium. Alumina is mixed with other chemicals at very high temperatures (about 950 degrees Celsius) and an electric current is passed through it.

The alumina is then split by an electro-chemical reaction into its two main parts - aluminium and oxygen. The liquid aluminium forms on the bottom of the smelting cell or 'pot' and it is then sucked out by a large vacuum. It is then poured into moulds, cooled by water and forms blocks of aluminium called ingots, ready for shipment around the world.

Some ingots make their way to Alcoa's rolling mills at Geelong in Victoria and Sydney in New South Wales. They are then rolled into can sheet for beverage cans; sheet and coil for use in road signs, licence plates, boats and caravans; and household foil which is used in kitchens around the world.

Aluminium is endlessly recyclable and Alcoa runs the largest aluminium recycling operations in Australia at our plant here at Yennora in Western Sydney.

Site Environment Improvement Plan

Yennora Environment Improvement Plan

This Environment Improvement Plan was prepared on behalf of the Yennora community consultative partnership to give an overview of Alcoa Australia Rolled Products operations, improvements accomplished to date, and the current initiatives program.

The community consultative process is an integral part of our Environment Improvement Plan. Alcoa Australia Rolled Products have sought every opportunity in the formulation of this Environment Improvement Plan to eliminate waste, conserve resources, and reduce pollution, and will report regularly to the community consultative partners on the progress of agreed Environment Improvement Plan actions.

The Environment Improvement Plan will be reviewed annually by the community consultative partners to assess progress and provide input to future goals and actions. The Environment Improvement Plan will be rewritten every two years.

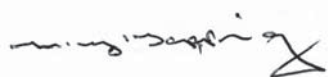


John Costley
Location Manager
Alcoa Australia Rolled Products

As members of the community consultative process we acknowledge our participation in the development of this plan and will continue to monitor the progress of Alcoa Australia Rolled Products, Yennora operations, throughout 2006-2007.



(Melaina Cook)
Community
Consultative
Partner



(Len Topping)
Community
Consultative
Partner



(Brendan Groves)
Community
Consultative
Partner



(Cecil Barker)
Community
Consultative
Partner

about the community consultative process

Alcoa Australia Rolled Products at Yennora is committed to sustainable development by including environmental excellence in our decision making process. In order to achieve excellence it is essential that Alcoa Australia Rolled Products' Yennora operation consults the community.

In 2005, a Community Consultation Network (CCN) was formed to provide a regular forum for any individual or community organisation to raise any concerns they may have in respect to our environmental impact, performance and management, directly with managers or environment team members. To address these issues, the first project of the CCN was to prepare this first Environment Improvement Plan (EIP) for Yennora. The preparation of this EIP at Yennora is a voluntary initiative and provides a mechanism through which the community is consulted on past and future environmental performance, and provides an opportunity to discuss strategies for addressing any issues. Importantly, this EIP establishes a benchmark against which the community will assess future performance.

This consultative group is made up of local residents, local government, environment groups and the Environment Protection Authority.

Meetings are held throughout the year and minutes are

circulated from each meeting to all interested contacts. For more information about the EIP or the Community Advisory Board, contact Helen Campbell in Community Relations on (02) 9681 9554.



EIP Targets for 2006-07

section	proposed targets 06-07	proposed actions 06-07	performance measures
AIR EMISSIONS MANAGEMENT			
SO ₂	<p>Sulphur Dioxide (SO₂) No exceeding the site load based limits (LBL) as set by the NSW EPA licence (SO₂ LBL = 34t)</p> <p>Maintain or reduce SO₂ emitted per tonne of aluminium product sold from 2004 baseline. (2004 SO₂ = 0.263kg per tonne of aluminium sold)</p>	<p>Investigate benefits and viability of changing to bio-diesel in all forklifts.</p>	SO ₂ emitted per tonne of aluminium product sold.
NO _x	<p>Oxides of Nitrogen (NO₂, NO, N₂O) No exceeding the site load based limits (LBL) as set by the NSW EPA licence (NO_x LBL = 108t)</p> <p>Maintain or reduce NO_x emitted per tonne of aluminium product sold from 2004 baseline. (2004 NO_x = 0.8kg per tonne of aluminium sold)</p>	<p>Investigate benefits and viability of changing to bio-diesel in all forklifts.</p>	NO _x emitted per tonne of aluminium product sold.
Dioxins	<p>Dioxins Maintain or reduce dioxins emitted per tonne of aluminium product sold. No exceeding the Clean Air 1ng/m³ Regulation limit of 0.1ng/m³.</p>	<p>Dioxins are already emitted at very low levels and we will remain alert to best available technologies for air emission control</p> <p>Quarterly monitoring of dioxins</p>	Measure dioxins and furans at ng/m ³
VOC's	<p>Volatile Organic Compounds No exceeding the site load based limits (LBL) as set by the NSW EPA licence (VOC's LBL = 145t)</p> <p>Maintain or reduce VOCs emitted per tonne of aluminium product sold from 2004 baseline. (2004 VOC's = 1.062kg per tonne of aluminium sold)</p>	<p>Investigate benefits and viability of changing to bio-diesel in all forklifts.</p> <p>Improvements in production cycle for finished goods planned are expected to reduce VOC outputs per tonne of aluminium sold.</p>	VOCs emitted per tonne of aluminium product sold.
Fluoride	<p>Fluoride Compounds No exceeding the site load based limits (LBL) as set by the NSW EPA licence (F LBL = 1.2t)</p> <p>Maintain or reduce fluoride emitted per tonne of aluminium product sold from 2004 baseline. (2004 F = 0.004kg per tonne of aluminium)</p>	<p>Fluoride is already emitted at very low levels and we will remain alert to best available technologies for air emission control.</p>	Fluoride emitted per tonne of aluminium product sold.
PM	<p>Particulate Matter (PM₁₀ - 10 micrometres or less and PM₂₅ 25 micrometres or less)</p> <p>No exceeding the site load based limits (LBL) as set by the NSW EPA licence. These are PM₁₀ LBL = 12t and PM₂₅ LBL = 29t.</p> <p>Maintain or reduce particulate matter emitted per tonne of aluminium product sold from 2004 baseline. (2004 PM₁₀ = 0.091kg per tonne of aluminium) (2004 PM₂₅ = 0.222kg per tonne of aluminium)</p>	<p>Investigate benefits and viability of changing to bio-diesel in all forklifts.</p> <p>Hood improvement on rotary furnace</p> <p>Salt Slag cooling and loading practices.</p>	Particulate matter emitted per tonne of aluminium product sold

section	proposed targets 06-07	proposed actions 06-07	performance measures
WATER MANAGEMENT			
Water Use	<p>Continue to reduce water usage</p> <p>Reduce water usage per tonne of aluminium product sold from 2004 baseline by 20%</p> <p>2004 1.89kl water used per tonne of aluminium sold</p>	<p>Implement an improved water monitoring system to allow faster response to high water use.</p> <p>Install new cooling tower at the Ingot Mill.</p> <p>Investigate installation of tanks to harvest rainwater and supplement town water.</p> <p>Consultation with local water authorities to further develop water saving strategies</p> <p>Development of a water process map.</p> <p>Continued investigations into processes to improve water efficiencies.</p>	<p>Kilolitres of water used per tonne of aluminium sold</p>
WASTE MANAGEMENT			
	<p>Continue with waste minimisation activities to identify waste to landfill reduction opportunities.</p>	<p>Continue to work with suppliers to further identify packaging waste reduction and recyclable supplies initiatives</p> <p>Complete assessment of recyclable canteen food waste packaging for implementation.</p> <p>Investigate opportunities to completely recycle salt slag.</p>	<p>Assessment report on waste reduction projects</p>
NOISE MANAGEMENT			
Noise Reduction	<p>40%, or more, reduction from the 2003 baseline in the number or magnitude of the top 10 noise sources</p>	<p>Continue to proactively consider environmental noise emissions and cumulative noise in design for significant capital projects to maintain compliance</p> <p>Continue to maintain and develop relationships with Yennora neighbours and endeavour to achieve satisfactory and timely resolution to issues relating to Alcoa</p>	<p>Major new projects include noise considerations in design.</p> <p>40%, or more, reduction from the 2003 baseline in the number or magnitude of the top 10 noise sources</p>
TRANSPORT MANAGEMENT			
	<p>Identify transport minimisation opportunities in deliveries and receipts for finished goods, metal receipts, other despatch and other receipts</p>	<p>Review current vehicle movements and identify consolidation and reduction opportunities.</p> <p>Ensure transport movements use only approved routes.</p>	<p>Use only approved routes. Utilising all transport movements and minimising empty truck movements</p>

Alcoa Australia Rolled Products

Environment, Health & Safety Value, Policy & Principles

Our Environment, Health and Safety (EHS) Value, Policy and Principles guide our actions and behaviours.

EHS Value

We work safely in a manner that protects and promotes the health and well-being of the individual and the environment.

EHS Policy

It is Alcoa's policy to operate worldwide in a safe, responsible manner which respects the environment and the health of our employees, our customers and the communities where we operate. We will not compromise environmental, health or safety values for profit or production.

All employees and contractors are expected to understand, promote and assist in the implementation of this policy and the accompanying principles.

EHS Principles

- We value human life above all else and manage risks accordingly.
- We relentlessly pursue and continually improve EHS systems and processes to achieve an EHS incident-free workplace.
- We do not compromise our EHS value for profit or production.
- We comply with all laws and set higher standards for ourselves and our suppliers where unacceptable risks are identified.
- We support pollution prevention and sustainable development, by incorporating social responsibility, economic success and environmental excellence into our decision-making process.
- We measure and assess our performance and are open and transparent in our communications.
- We supply and use safe and reliable products and services.
- We use our knowledge to enhance the safety and well being of our communities
- We are committed to continual improvement in all aspects of our environmental, health and safety performance
- We are all accountable for conforming with and deploying our EHS value and principles.

At Alcoa ARP Yennora, all employees and contractors will demonstrate their commitment to this EHS Policy and Principle Statement by progressively reducing our environmental, health and safety impacts and the intensity of our resource and energy use by participating in programs to:

- Eliminate environmental incidents and injuries to people
- Ensure environmental, health and safety factors are integrated into business planning and review through the Alcoa Business System, as part of the implementation of comprehensive environmental and safety management systems;
- Systematically address key environmental impacts, such as air quality, process water usage and discharge, waste generation and disposal, energy efficiency, greenhouse gas emissions and land management issues;
- Work together to care for ourselves, other people in our work area, and our neighbours; and
- Actively share our improvements and achievements within Alcoa ARP Yennora and the wider Alcoa Organisation.



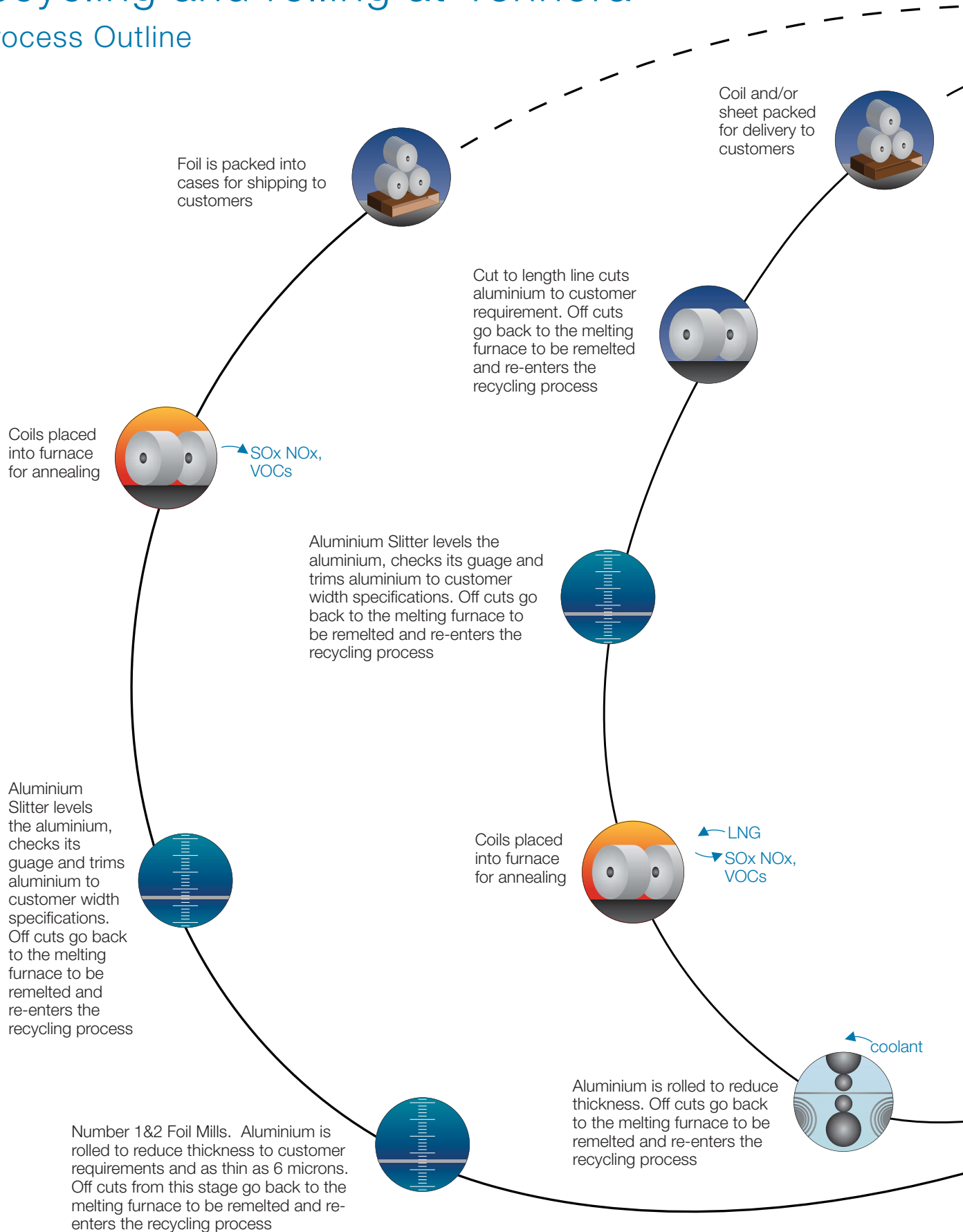
John Costley
Location Manager
Alcoa ARP – Yennora
November 2005
Document Version 13 (11-Nov-2005)

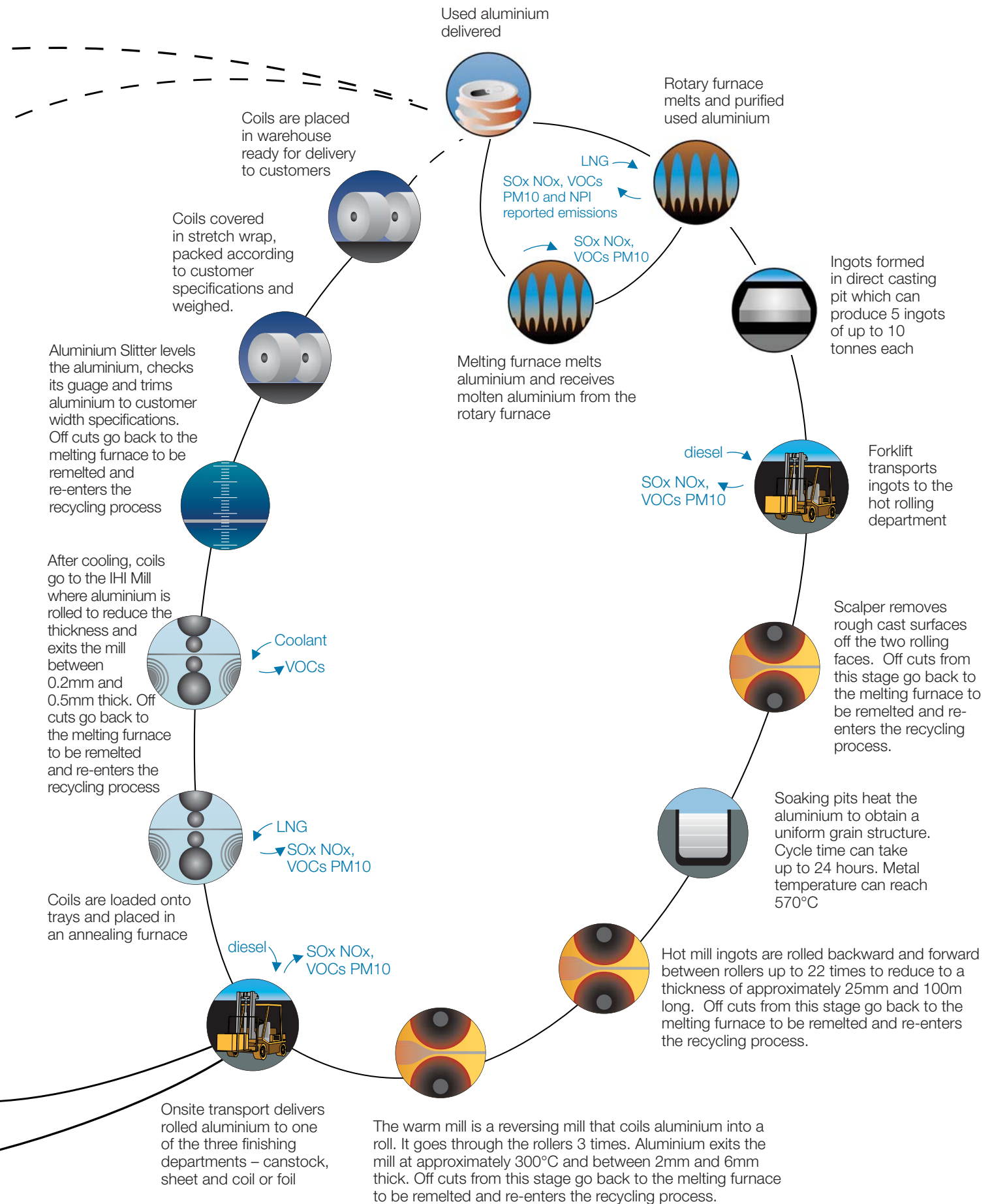
Alcoa Australia
Rolled Products



recycling and rolling at Yennora

Process Outline





Environmental History and Achievements

2005

Community Consultation Network Established

Alcoa Australia Rolled Products Community Consultation process restarted and commitment to produce first Environmental Improvement Plan made to community.

Dust Controls

Modified operational practices and engaged ventilation consultants to find the best way to improve dust control in the rotary furnace building. Yennora received 7 complaints from our industrial neighbours in 2005 about dust and smoke caused by opening the tilting rotary furnace (RF3) door.

ISO14001 Certification

Yennora is working toward achieving certification in 2005. ISO (International Organization for Standardization) is a global network that identifies what International Standards are required by business, government and society, develops them in partnership with the sectors that will put them to use, adopts them by transparent procedures based on national input and delivers them to be implemented worldwide. The ISO 9000 and ISO 14000 families of management system standards have spearheaded a widening of ISO's scope to include managerial and organizational practice.

2004

Waste Minimisation Strategy

Waste contractors usage rationalised to ensure unified waste management. The site has contracts with two accredited waste companies. One manages all solid wastes and the other all liquid wastes. We work with both companies to find waste minimisation opportunities such as on-site recycling initiatives. Waste drums have been rationalised and replaced with 1,000 litre pods to improve risk management association with handling and storage of waste.

Dust Control

A temporary screen was added to the salt slag bay to provide additional dust control. Dust is generated by handling movement of salt slag. Salt slag production from the ingot department has increased to 12,400 tonnes in 2004. Increased production at the site has increased the total level of dust emissions generated in loading trucks for transport to the processing location. At the same time efficiencies have led to the reduction of dust emissions generated per tonne produced. (See Air Emissions Section for further details).

2002

Odour issues resolved

Alcoa Australia Rolled Products at Yennora received 162 odour complaints in 2000. The odour emanated from the warm mill and was caused by decomposing coolant. The cleaning and maintenance program was adjusted to ensure that the odour was managed. No odour complaints have been received for the warm mill since 2002.

Adoption of waste minimisation strategy

A waste minimisation team was established following the development and implementation of a regulatory compliant waste management program and strategy in 2001.

2000-2001 Stormwater drainage improved

Stormwater from Alcoa's Yennora site passes through a first flush drainage system into Stimsons Creek. Improvements to spill response, emergency preparedness, and spill prevention through first flush maintenance and a new above ground tank management program were achieved. Concurrent training programs improved environmental awareness of employees on water issues.

1996-7 Ground water Monitoring

The Groundwater monitoring program is set up to monitor groundwater levels and water samples from bores that are used to gauge the impact of operations on the groundwater. Alcoa Australia Rolled Products commenced ground water monitoring when Alcoa assumed an interest in the business. This helps us to manage the ground water contamination, a legacy on site from past operations.



alcoa's environmental audit program



Alcoa has implemented a comprehensive environmental auditing program.

The program operates at two levels within the Alcoa organisation globally.

1. Integrated Audit

This is managed by Alcoa's Corporate Internal Audit Department located at Alcoa's headquarters in Western Australia. The results of an integrated audit are published to corporate head office and involve a strict management process ensuring all identified risks are properly managed. These are undertaken at least every three years. The process includes interviews, procedure reviews, site verification inspection and a review of the location's self assessment progress.

2. Self-Assessment Audit

This is managed by on site location personnel and reported via an Alcoa global web-based reporting tool on an ongoing basis. Each location such as Yennora is required to complete a self-assessment audit using the Alcoa Self Assessment Tool. Commonly known as ASAT these internal audits must be completed every 18 months. The process is similar to that used during an integrated audit.

Areas covered by both audit systems include environmental management system, waste, water, air emission, chemical and land management systems.

In total 44 environmental objectives are audited including:
The process includes interviews, procedure reviews, site verification inspection and a review of the location's self assessment progress.

- EHS Policy & Commitment
- EHS Objectives, Targets & Action Plans
- Chemical Release Reporting Procedures
- Communication
- Records
- Waste Identification and Classification
- Recordkeeping
- Water Discharge Identification And Characterization
- Underground Wastewater Disposal System
- Regulatory Analysis And Managing Requirements
- Permit/License Compliance Program
- Control equipment Operation
- EHS Management System Documentation & Document Control
- Polychlorinated biphenyle Management
- Groundwater Monitoring
- EHS Aspects, Risks & Impacts
- EHS Organisational Structure, Responsibility & Accountability
- EHS Management Systems Audit
- Monitoring & Measurement
- Training
- On-site accumulation and storage Management
- Emissions Inventory
- Wastewater Permitting For Surface Water Discharges
- Wastewater Treatment Facilities
- Chemical Management - Allegations And Inventories
- Remedial Assessment And Clean-Up
- Impacts Evaluation
- Hazardous Chemical Inventory, Pollution Release and Off-Site Transfer Reporting
- Aboveground Storage Tanks
- Sampling and Monitoring
- Legal & Other Requirements
- Training, Awareness & Competence
- Emergency Preparedness & Response
- Operational Control
- Management Review
- Dross and Dross Residue
- Drinking Water
- Off-site Waste Disposal and Transport Management
- Discharge To Municipal Treatment Systems
- Emission And Process Changes
- Reporting and Corrective Actions
- Emergency Response Plan
- EHS Incidents & Non-conformance Corrective & Preventative Action
- Location Land Management

Each objective has minimum expectations which are applied to all Alcoa sites globally. Each minimum has a series of testing suggestions against which each site's processes are audited.

The most recent integrated audit at Yennora in 2003 rated the site to have an over all "good" rating. To obtain a good rating all the testing suggestions and minimum expectations must be in place. The overall process is designed to ensure minimum standards are being met and are continually being improved. Areas for improvement are being continuously addressed, such as rolling mill mass balance programs which improves process efficiencies.

legislation, licenses and agreements

Alcoa Australia Rolled Products operates in accordance with several environmental Acts and regulations. See the list below which includes a short summary of the main Acts and Regulations guiding the site's activities:

PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997

This is the legislation under which Yennora's EPA License is issued.

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT (1979)

ROAD AND RAIL TRANSPORT (DANGEROUS GOODS) ACT 1997

CLEAN WATERS REGULATIONS 1972

CONTAMINATED LAND MANAGEMENT REGULATION 1998

ENVIRONMENTALLY HAZARDOUS CHEMICALS REGULATION 1999

PROTECTION OF THE ENVIRONMENT OPERATIONS (CLEAN AIR) REGULATION 2002

PROTECTION OF THE ENVIRONMENT OPERATIONS (GENERAL) REGULATION 1998

PROTECTION OF THE ENVIRONMENT OPERATIONS (NOISE CONTROL) REGULATION 2000

PROTECTION OF THE ENVIRONMENT OPERATIONS (WASTE) REGULATION 1996

ROAD AND RAIL TRANSPORT (DANGEROUS GOODS) (RAIL) REGULATION 1998

environmental management at alcoa

AIR EMISSIONS

Alcoa Australia Rolled Products' air emissions are controlled under license by the NSW Environment Protection Authority (EPA), which is managed by the NSW Department of Environment and Conservation (DEC). The EPA license sets load-based limits (LBL) for NO_x, SO₂, VOCs, Fluoride and Particulate Matter (coarse and fine) for the site at Yennora. The license also sets out the levels and frequency of monitoring for specific types of emissions.

In addition to EPA reporting, emissions are reported to the National Pollutant Inventory (NPI) website (www.npi.gov.au) each year. The National Environment Protection Council (NEPC) launched the NPI in 2000. The NPI is an internet database published by the Commonwealth Government and designed to provide the community, industry and government information on the types and amounts of certain substances being emitted to the environment in Australia. This database contains information about emissions from sources similar to our own operations, and EPA estimates of emissions from smaller NSW business activities such as petrol stations, dry cleaners or fast food outlets, and other sources including transport, home heating and cigarette smoking.

Alcoa Australia Rolled Products' Yennora site has been reporting annual emissions to the NPI since 2002. The NPI database is updated annually on January 31 of each year, full details are provided at www.npi.gov.au

Due to variations in yearly production levels and improvements in sampling and measuring techniques it is not unusual for emission levels to vary from year to year. All emissions reported to the NPI in 2005 were under the licence limits set by the NSW EPA for the Yennora site.

environmental management at alcoa

Following is a full list of the substances Alcoa Australia Rolled Products Yennora reports on to the NPI. The figures reported refer to emissions generated across the whole site at Yennora:

substance	where it is found	reported levels NPI
ARSENIC	<p>Arsenic occurs naturally in the earth's crust in small quantities and is released into the air by volcanoes and the weathering of arsenic containing rock. It is commonly used for pesticides, weedkillers and wood preservatives. The main use of arsenic is for pesticides, weed killers, and wood preservatives. It is used for hardening copper, lead and other alloys. Most arsenic compounds are manufactured using arsenic trioxide as a raw material. They are used for wood preservatives, treating sulfide ores, and plant and veterinary chemicals. Coal fuelled power plants and copper and lead smelters are the largest point sources of arsenic. These releases are primarily to the air. At Alcoa Australia Rolled Products at Yennora, this is a by-product of the melting process at RF3.</p>	<p>2002/03 – 3 kg 2003/04 - 1.06 kg 2004/05 – 0.16 kg The decrease is most likely due to process variation.</p>
BERYLLIUM	<p>Beryllium compounds can be found in mineral rocks, soil, oil and volcanic dust. Small quantities can be found in products such as personal computers, televisions, calculators and microwave ovens. Emissions to air can result from combustion of coal and oil in power plants.</p> <p>At Alcoa Australia Rolled Products at Yennora, this is a by-product of the melting process at RF3.</p>	<p>2002/03 - 1.5 kgs 2003/04 - 1.06 kg 2004/05 – 0.16 kg The decrease is most likely due to process variation.</p>
CADMIUM	<p>Cadmium is a naturally occurring element in the earth's crust. It is most commonly found combined with other elements such as copper and lead ores. The main sources of emission for cadmium & compounds are copper and lead smelting as well as power generation.</p> <p>At Alcoa Australia Rolled Products at Yennora, this is a by-product of the melting process at RF3.</p>	<p>2002/03 -2 kg, 2003/04 - 0.28 kg 2004/05 – 0.84 kg The decrease is most likely due to process variation.</p>
CARBON MONOXIDE	<p>Carbon Monoxide is a colourless and odourless gas. It is emitted by motor vehicles, forest fires, garden waste and lawn mowing as well as from aluminium smelters, steel and oil refineries and electricity generators.</p> <p>At Alcoa Australia Rolled Products at Yennora, this is a product of combustion from all furnaces, use of fuel including natural gas, LPG and diesel.</p>	<p>2002/03 – 36,913 kg 2003/04 - 58,241 kg 2004/05 – 63,207.55 kg This increase is most likely due to variations in production levels and variations within the sampling technique.</p>
CHROME (III)	<p>Chromium is a relatively common element found naturally in rocks, soil, plants, animals, volcanic dust oil and coal. The major industrial emission sources of chromium are iron and steel manufacturing, motor vehicles, textile manufacturing, and combustion processes of oil and coal such as power stations.</p> <p>At Alcoa Australia Rolled Products at Yennora, this is a by-product of the melting process.</p>	<p>2002/03 - 0.07 kg 2003/04 - 9.38 kg 2004/05 – 26.98 kg This is most likely due to process variation or variation in sampling technique.</p>
CHROME (VI)	<p>Chromium (VI) compounds are not found in nature. Chromium is usually found as the Cr (III) form, as the mineral Chromite and in many soils. Chrome VI used to make bricks and linings for furnaces. Compounds are used for chrome plating (chromic acid), manufacture of dyes (soluble chromates), wood treatment and water treatment.</p> <p>At Alcoa Australia Rolled Products at Yennora, this is a by-product of the melting process.</p>	<p>2002/03 - 4.5 kg 2003/04 - 13.12 kg 2004/05 – 16.71 kg This is most likely due to process variation or variation in sampling technique</p>

substance	where it is found	reported levels NPI
COPPER	<p>Copper is a relatively common element found naturally in rocks, soil, plants and animals. It is typically used in electrical and plumbing applications. Copper is also used in a number of agricultural and gardening applications such as in fungicides, as well as paint and pigment in glass and enamels.</p> <p>The main industrial source of air emissions is metal fabrication, petroleum refining, motor vehicles, and combustion of various fuels. The major land emission is through sewage sludge.</p> <p>At Alcoa Australia Rolled Products at Yennora, this is a by-product of the melting process.</p>	<p>2002/03 -17 kg 2003/04 - 11.12 kg 2004/05 -2.19 kg This is most likely due to process variation or variation in sampling technique.</p>
FLOURIDE	<p>Fluoride compounds are all related by containing fluorine. Fluorine is a naturally occurring element in the earth. It is usually found in the form of mineral fluorspar, CaF₂. It combines with hydrogen to make hydrogen fluoride, a colourless gas with a strong irritating odour. Hydrogen fluoride is used to make aluminium, chlorofluorocarbons, aluminium fluoride, sodium fluoride and other fluoride salts. It is used in the petroleum, chemical and plastics industries. Fluoride is emitted from the Rolled Products Ingot Mill Furnaces through the gas, hydrogen fluoride, as well as from dust particles.</p>	<p>2002/03 -380 kg 2003/04 - 419 kg 2004/05 - 429.12 kg This is most likely due to process variation.</p>
HYDROCHLORIC ACID	<p>Hydrochloric acid is a colourless liquid with an irritating odour or a colourless to slightly yellow gas. Major sources include motor vehicles, solid fuel burning, and lawn mowing and cooking. It is used in the manufacture of phosphoric acid, chlorine dioxide, ammonium chloride, fertilisers, dyes, and artificial silk and pigments for paints. It is used as a refining ore in the production of tin and tantalum, as a lab reagent, and as a metal treating agent. Hydrochloric acid is also used in Water Treatment Plants to neutralise caustic solutions.</p> <p>At Alcoa Australia Rolled Products at Yennora, this is a by-product of the melting process measured at RF3.</p>	<p>2003/04 - 3171 kg 2004/05 -7698.8 kg This is most likely due to process variation.</p>
LEAD	<p>Lead is best known for its use in plumbing applications, batteries, sinkers for fishing, lead based paint and in leaded petrol. Motor vehicles have been by far the largest source of lead emissions, with electricity generation and aeroplanes a significant way behind.</p> <p>At Alcoa Australia Rolled Products at Yennora, this is a by-product of the melting process measured at RF3.</p>	<p>2002/03 - 3.2 kg 2003/04 - 1.02 kg 2004/05 -0.25 kg This is most likely due to process variation.</p>
MANGANESE AND COMPOUNDS	<p>Manganese is very similar to iron in its physical and chemical properties, the chief difference being that manganese is harder and more brittle. Manganese exists mostly in the (II) oxidation state in natural compounds. It can also appear as manganese (IV) in manganese dioxide. Synthetic compounds are known in nearly all oxidation states between (III-) and (VII+). Manganese is predominantly used to produce ferromanganese, or metallic manganese, which is used in the production of steel to improve hardness, stiffness, and strength. It is used in carbon steel, stainless steel, high-temperature steel, and tool steel, along with cast iron and superalloys. Manganese finds further applications in a number of non-ferrous alloys, especially with aluminium, magnesium, copper and zinc.</p> <p>At Alcoa Australia Rolled Products at Yennora, this is a by-product of the melting process</p>	<p>2002/03 - 22 kg 2003/04 - 3.24 kg 2004/05 -13.03 kg This is most probably a result of improved measuring techniques</p>
MERCURY	<p>Mercury, a naturally occurring element, is an odourless, very heavy, silver white, liquid metal. Mercuric chloride is an odourless, white powder or crystal. Mercury is used in its pure form in thermometers and barometers. Many batteries contain mercury. It is used in floodlights, streetlights, and other outdoor or powerful lights. It is also used as a catalyst in the chemical manufacturing industry. It is used to conduct electricity (i.e. thermostats). Mercury is used in dental amalgams.</p> <p>At Alcoa Australia Rolled Products at Yennora, this is a by-product of the melting process at RF3.</p>	<p>2002/03 - 0.3 kg 2003/04 - 0.02 kg 2004/05 - 0.1 kg</p>

environmental management at alcoa

substance	where it is found	reported levels NPI
NICKEL	<p>Nickel is a silvery white metal that works well as a conductor of electricity and heat. It is often used in metal alloying such as for stainless steel, coins, jewellery, and batteries. The combustion of coal and other fossil fuels results in emissions of nickel compounds to air from shipping, aeroplanes, motor vehicles, power generation and backyard incinerators. Some manufacturing processes of motor vehicle parts components and iron and steel manufacturing also create nickel emissions.</p> <p>At Alcoa Australia Rolled Products at Yennora, this is a by-product of the melting process at RF3.</p>	<p>2002/03 - 2.4 kg 2003/04 -2.28 kg 2004/05 - 2.52 kg</p>
NICKEL CARBONYL	<p>Nickel Carbonyl is flammable and explosive. It is slightly soluble in water, but soluble in other organic solvents. Nickel Carbonyl is used in refining nickel ore, forming nickel films and coatings, as a catalyst in various chemical reactions, and in glass plating.</p> <p>At Alcoa Australia Rolled Products at Yennora, this is a by-product of the melting process at RF3.</p>	<p>2002/03 - 270 kg 2003/04 - 96.40 kg 2004/05 - 0 kg The decrease is most probably due to process variation and measuring techniques.</p>
OXIDES OF NITROGEN	<p>Oxides of Nitrogen are largely emitted by motor vehicles and energy generators but can also be produced by lightning, forest fires and the use of fertiliser in agriculture.</p> <p>At Alcoa Australia Rolled Products at Yennora, this is a product of combustion and is generated by all furnaces and vehicles onsite.</p>	<p>2002/03-76,589 kg 2003/04 at 80,568 kg 2004/05 -82,322.40 kg This is due mainly to production increases as the measure is based on a site specific emission factor weighted against finished tonnes produced.</p>
PARTICULATE MATTER (PM10)	<p>Particulate Matter (PM10) refers to dust particles of less than one hundredth of a millimetre. They are emitted by industry where there are any activities involving the movement of raw materials and combustion of fuels. They are also caused by lawn mowing, wood stoves, fires and cigarette smoke.</p> <p>At Alcoa Australia Rolled Products at Yennora, this is a product of combustion. It is generated by operation and movements of all furnaces and vehicles onsite.</p>	<p>2002/03 - 8,583 kg 2003/04 - 8,583 kg 2004/05 -9,212 kg This is due mainly to production variations as the measure is based on a site specific emission factor weighted against finished tonnes produced.</p>
POLYCHLORINATED DIOXINS AND FURANS	<p>Polychlorinated Dioxins and Furans are generated in small concentrations as by-products of chemical manufacturing and incomplete combustion where raw materials contain trace amounts of chloride. Another source is for example the burning of medical waste.</p> <p>At Alcoa Australia Rolled Products at Yennora, this is a by-product of the melting process at RF3.</p>	<p>2003 - 2004 level of 0.0000152 kg is extremely low. 2004/05 - 0.00000959 kg (This is a total emission and does not relate to individual compounds.) There is little difference between this and the 2002-2003 figure of 0.000009 kg</p>
POLYCYCLIC AROMATIC HYDROCARBONS (PAHS)	<p>Polycyclic Aromatic Hydrocarbons (PAHs) are usually odourless white or pale yellow-green solids and the major sources are motor vehicles, solid fuel burning, and lawn mowing and cooking. They are also found in asphalt roads and tar.</p> <p>At Alcoa Australia Rolled Products at Yennora, this is a by-product of the melting process at RF3.</p>	<p>2002/03 - 10 kg 2003/04 - 59.19 kg 2004/05 - 130.08 kg This is most probably due to process variations.</p>
SULPHUR DIOXIDE	<p>Sulphur dioxide is a colourless gas with an odour. It is commonly used as a fruit preserving agent, in wine making, as bleach and as a fumigant for growing grains, grapes and citrus fruit.</p> <p>At Alcoa Australia Rolled Products at Yennora, this is a by-product of all melting processes on site and is a product of combustion.</p>	<p>2002/03 - 28,439 kg 2003/04 -25,757 kg 2004/05 - 26,369.76 kg This is most likely due to process variation.</p>
VOLATILE ORGANIC COMPOUNDS (VOCs)	<p>Volatile Organic Compounds (VOCs) are the gases given off by a wide range of organic chemical compounds. Major sources of VOCs are motor vehicles, service stations and solid fuel burning in domestic heaters.</p> <p>At Alcoa Australia Rolled Products at Yennora, this is a by-product of all melting processes on site.</p>	<p>2002/03 - 120,000 kg 2003/04 -103,970 kg 2004/05 - 109,134.05 kg This is most likely due to process variation.</p>

All emitted pollutants at Yennora are well below the prescribed limits of Alcoa Australia Rolled Products' EPA licence. Emissions reported to both the EPA and to the NPI reflect air emissions generated by the entire site. There are some notable aspects of the site's production processes that generate air emissions. These include:

Tilting Rotary Furnace (RF3)

At Alcoa Australia Rolled Products at Yennora, the major source of air pollution from the plant is the exhaust of RF3.

- RF3 has been benchmarked against the United Nations Environmental Protection (UNEP) draft guidelines on Best Available Techniques (BAT) and guidance of best environmental practice relevant to secondary aluminium production.
- RF3 has a Lime Injected Baghouse designed to remove particulates, gaseous acids and fluorides. The Baghouse has an efficiency of over 95 percent. This technology is referenced in the UNEP draft secondary aluminium recommendations.
- We regularly monitor air emissions at RF3.

To achieve continuous improvement in managing air emissions, Alcoa Australia Rolled Products is committed to explore ways to reduce the amount of air emissions produced per tonne of aluminium product produced and sold by the site at Yennora. To do this, we are continuously reviewing the major production processes generating these emissions and exploring ways to improve their environmental impact.

Regularly updated analysis confirms that all pollutants are below today's standards of the Protection of the Environment Operations (Clean Air) Regulation 2002. This Regulation:

- sets maximum emission levels from certain premises of a number of substances, including chlorine, dioxins, furans, hazardous substances, smoke, soot, solid particles and sulphur;
- deals with the transport and storage of volatile organic liquids; and
- restricts the use of high sulphur liquid fuel

Our performance is reported to and audited by the EPA.

Alcoa Australia Rolled Products complies with its EPA licence conditions. Alcoa Australia Rolled Products has had ground level modelling of all potential air emissions, the modelling results indicate that these are all well below any standards.

Nitrogen Oxides (NO_x), Sulphur Dioxides (SO_x) and Volatile Organic Compounds (VOCs)

NO_x, SO_x and VOCs are measured in two main ways according to the EPA license: through the use of fuel on site and tonnage of production at the ingot mill. These measures reflect EPA standards for managing smelting and refining activities undertaken by the aluminium industry.

VOCs generally refer to the vapours or gases given off by the compounds rather than the liquid phase of the compounds – an example might include the smell of paints, carpets, solvents and so on. The major source of VOCs in Australian cities is petrol refining, fuel storage and the manufacturing sector activities. (www.npi.gov.au). At the Alcoa Australia Rolled Products site at Yennora, the majority of VOCs are emitted from finished goods during the annealing process. Annealing (or heating up) takes place after the aluminium is rolled. The rolled aluminium is reheated in an annealing furnace and the vapours from this process are VOC's. Annealing is an essential process to ensure that properties of the aluminium are suitable for rolling. In the foil mill for example, products are rolled and annealed up to four times. Improvements in this process will see the number of times this process is required reduced. We are investigating use of water based coolants in the finished goods mills which would lead to significant VOCs reductions.

environmental management at alcoa

These emissions are principally generated at Yennora by use of purchased fuels. These are propane and diesel, which are used for on-site transport such as fork lifts, and natural gas which is used to fuel all furnaces on site.

Fluoride compounds

Fluoride compounds are all related by containing fluorine. Fluorine is a naturally occurring element in the earth. It is usually found in the form of mineral fluor spar, CaF_2 . It combines with hydrogen to make hydrogen fluoride. Hydrogen fluoride is used to make aluminium, chlorofluorocarbons, aluminium fluoride, sodium fluoride and other fluoride salts. It is used in the petroleum, chemical and plastics industries.

Fluoride compounds are also subject to an EPA licence limit and fluoride emissions are measured by Alcoa Australia Rolled Products at Yennora at the melting and remelting facility (ingot mill). Levels of fluoride emissions at Yennora are very low and are set out in the NPI table. Fluoride emissions are filtered through the baghouse. The priority for Yennora is to continue to manage these at a very low level.

Particulates (dust and smoke)

Particulate Matter (PM10) is dust particles of less than one hundredth of a millimetre. They are emitted by industry where there are any activities involving the movement of raw materials and combustion of fuels. They are also caused by lawn mowing, wood stoves, fires and cigarette smoke.

Emissions of fine and coarse particulates are subject to Alcoa Australia Rolled Products at Yennora's license. Fine particulates (PM10) are measured at the stacks and comprise of smoke and fine dust particles. Coarse particulates (PM25) can be generally characterised as dust or incomplete combustion of fuel. They are mainly generated by the level of ingot production, diesel and LPG usage and salt slag handling.

Emissions measured relate to those generated across the whole site, not only those emitted at tilting rotary furnace stacks (RF3). Areas that generate the most dust and smoke on the site include melting furnaces and RF3. These are continuously monitored for obscuration. Obscuration refers to the density of exhaust fumes passing through the stacks. Strict obscuration limits control the operations of the furnaces – that is, if these are exceeded the furnaces automatically shut the operation down. Obscuration monitoring operates 24 hours a day 7 days a week.

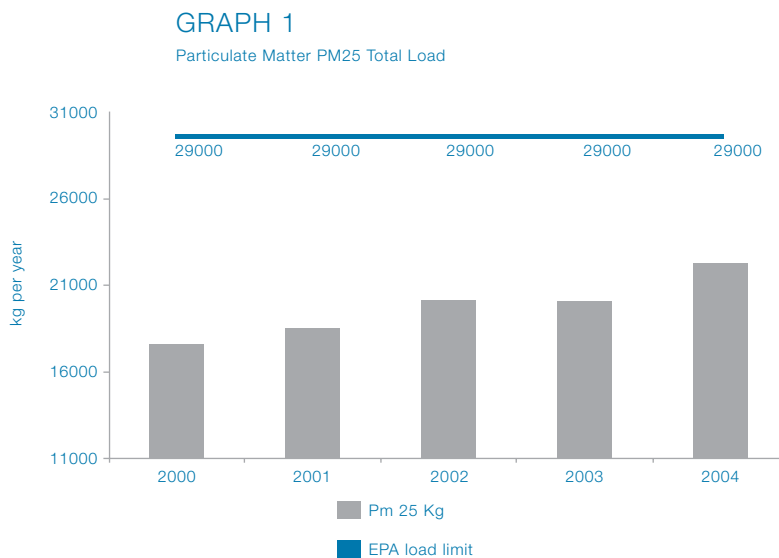
RF3 has been benchmarked against the United Nations Environmental Protection (UNEP) draft guidelines on Best Available Techniques (BAT) and guidance of best environmental practice relevant to secondary aluminium production. RF3 has a Lime Injected Baghouse designed to remove particulates, gaseous acids and fluorides. The Baghouse has an efficiency of over 95%. This technology is referenced in the UNEP draft secondary aluminium recommendations that reflect best international practice.

Dust and smoke emissions are also measured through use of purchased fuels according to industry standards set by the EPA. For example, vehicles will generate particulate matter (dust) either from direct emission from the burning of fuels (especially diesel powered vehicles) or action of tyres or vehicle generated air turbulence on road ways – this is not measured directly at the site, but an estimate is calculated according to EPA standards. Dust may also be generated from the action of wind and dusty material that the vehicle may be carrying – this may also be from the PM25 range of particulates, which refers to coarse particulates.

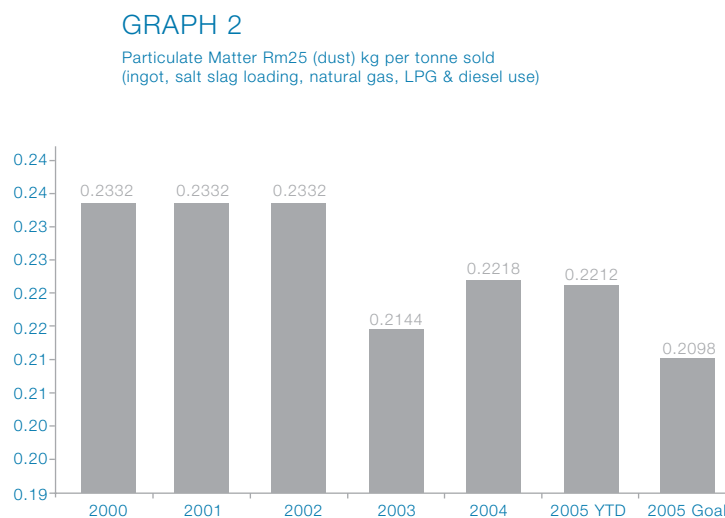
At Alcoa Australia Rolled Products at Yennora our focus in managing and controlling particulates focuses on:

- Good transport loading/unloading and housekeeping practices to minimise dusty environments. We are exploring ways to rationalise handling of salt slag to further reduce dust emissions from this activity. We are reviewing salt slag cooling and storage processes.
- Operational practices and upgrades to ensure that furnaces are properly maintained and loaded, and that fume extraction systems are properly functioning. In 2005, the rotary furnace has been improved which we expect will deliver even better performance in this area.

Graph 1 shows the site’s coarse particulate (PM25) total emissions as measured by the load based licence. The blue line represents the site’s load based limit as set out in the NSW EPA licence.

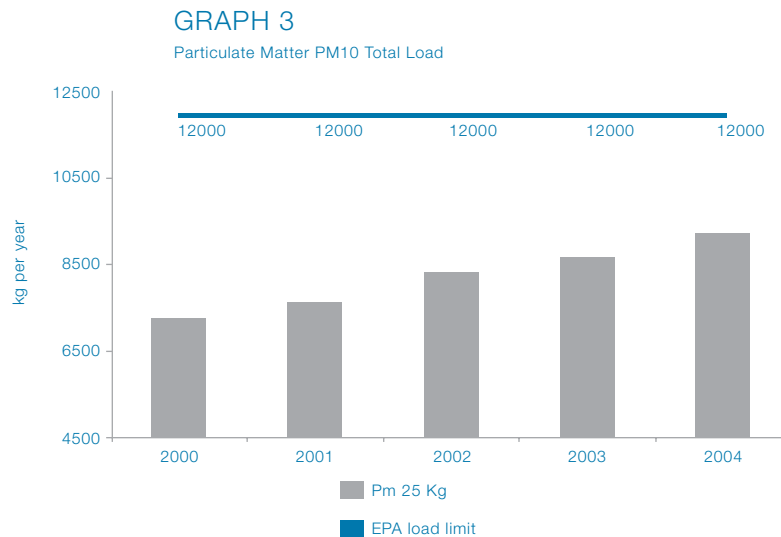


Graph 2 shows how much coarse particulate (PM25) is generated per tonne of aluminium sold from the site and shows that the level of particulate per tonne sold has been steadily reduced through improved efficiency.

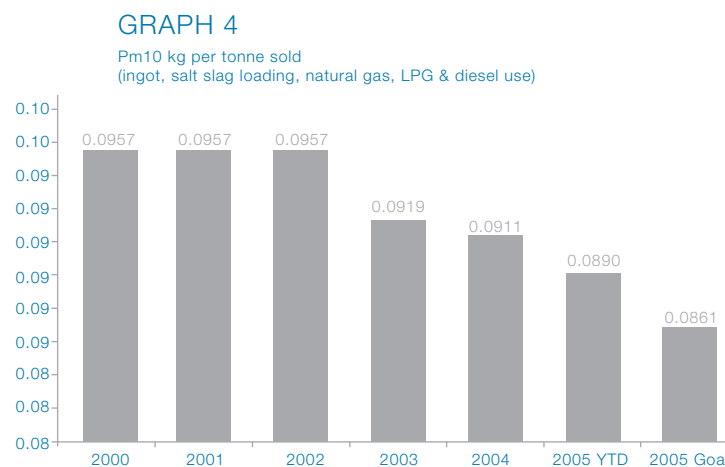


environmental management at alcoa

Graph 3 shows the site's fine particulate (PM10) total emissions as measured by the load based licence. The blue line represents the site's load based limit as set out in the NSW EPA license.



Graph 4 shows how much fine particulate (PM10) is generated per tonne of aluminium sold from the site and shows that the level of particulate per tonne sold has been steadily reduced through improved efficiency.



Dioxins and Furans

Polychlorinated Dioxins and Furans are generated in small concentrations as by-products of chemical manufacturing and incomplete combustion where raw materials contain trace amounts of chloride. Another source is for example the burning of medical waste.

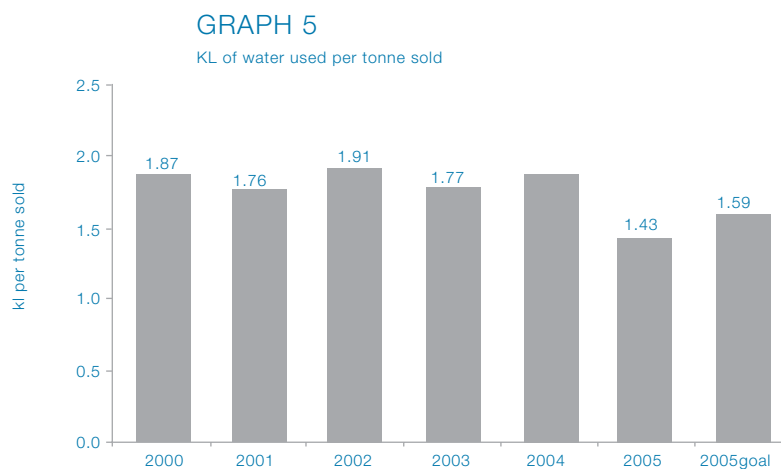
The Clean Air (Plant and Equipment) Regulation 1997 was repealed on 1 September 2005 and incorporated into the Protection of the Environment Operations (Clean Air) Regulations 2002 (PoEO Clean Air). The amended regulation includes a requirement that the concentration limit of dioxins and furans is 0.1ng/m³ for equipment installed after 1 September 2005 (Group 6). At present there is no standard of concentration for dioxins and furans using equipment operated at Alcoa Australia Rolled Products at Yennora (Groups 3, 4 & 5 or equipment installed before September 1 2005).

Dioxins and furans are emitted from the RF3 at Yennora. We monitor these regularly and testing conducted in August 2005 on all different materials processed through RF3 were below the standard applicable to Group 6 activities and plant equipment.

water management

At Alcoa Australia Rolled Products at Yennora the principle use of water is as a coolant on the Hotline and cooling processes in the Ingot Mill. Water usage is not included in the NSW EPA license. The water is discharged via the Sydney Water sewerage system under seven trade waste agreements with Sydney Water, each governing the discharge emitting from the seven discharge points on site.

Graph 5 shows water used per tonne sold.



Alcoa Australia Rolled Products at Yennora has realised good progress in improving water usage at the ingot mill over the past 18 months and is continuing to look for improvements in this area. The plant has implemented a range of water saving devices over the last year such as improving toilet flushing systems, shower heads, auditing and repairing leaks.

In 2003, Alcoa Australia Rolled Products at Yennora partnered Sydney Water's 'Every Drop Counts' program which included water audit activities to help the plant improve management of water use in different production activities. The plant adopted a number of Sydney Water's recommendations, and is exploring a range of measures to achieve continuous improvement including rainwater and storage collection, and water usage.

In 2004-05, we adopted a number of Sydney Water's recommendations, including adjusting the Total Dissolved Solids (TDS) meter. Reverse Osmosis plants will be installed in the can end line.

The EIP 2006-07 commits Alcoa Australia Rolled Products to implement a more detailed water monitoring system to allow for faster reaction to events and ensure that any water loss is minimised. In other planned improvements for the 2006-07 period, Alcoa Australia Rolled Products at Yennora is also evaluating options for the cooling tower at the Ingot Mill. Plans to rebuild the cooling tower in the Ingot Mill are already underway and anticipated water savings will be an integral part of the design of this facility. The facility will use best commercially available technology and we anticipate these improvements will contribute to realising our EIP water usage targets for 2006-07. We are also investigating the viability of installing rainwater tanks. A critical factor for the site in considering tanks is ensuring water can be delivered to point of use.

Over 2006-07, Alcoa Australia Rolled Products at Yennora will consider a range of measures to achieve continuous improvement. These will be measured by kilolitres per tonne of aluminium sold and reported in the next EIP against our current commitment to reduce water use by 20 percent.

Planned improvements in water usage will lead to reduced water discharge from the site.

waste

All waste must be categorised according to the NSW EPA Guideline for waste classification. Alcoa Australia Rolled Products at Yennora has waste management procedures in place to ensure that all waste streams are managed in accordance with best environmental practice. Alcoa Australia Rolled Products has internal targets on reducing waste that goes to landfill. In total, more than 90 percent of all waste is recycled with less than 10 percent going to landfill.

In addition to management of substances referred to in the EPA license, Alcoa Australia Rolled Products at Yennora has a comprehensive waste management framework which contains detailed policies and procedures for managing waste across all streams.

The Alcoa Australia Rolled Products site at Yennora has a number of waste streams. These include:

liquid wastes

These include waste coolants from the rolling mills and waste oils from the site's process (such as lubrication oils, hydraulic oils and roll mill coolants). Rolling mill coolants are transported off site to an independent contractor which distils the coolant and we reuse about 95% of this. The other 5% is then sold by the contracted distiller.

solid wastes

These include salt slag, lime dust and filter cake.

Salt slag is the combination of aluminium dross, salts and aluminium waste or by-product from the final remelting process. The salt slag is shipped to an

independent processor who reclaims the salts and the aluminium. The processor and Alcoa Australia Rolled Products are researching reuse opportunities for the inert, non-metallic product.

Lime Dust is generated by the filter baghouse and it is currently shipped to solid waste landfill. Alcoa Australia Rolled Products is currently researching opportunities to reuse lime dust.

Filter cake is generated by filtering the coolants in the rolling mills though filter medium (paper) to clean and reuse the coolant.

Other waste products generated on site include cardboard, paper and steel.

Waste Minimisation with Confoil

As part of Alcoa Australia Rolled Products' efforts to minimise waste to landfill, we work closely with customers to minimise packaging of finished goods leaving the site. This helps the site at Yennora, and our customers, to minimise waste as well as the cost of packaging, handling requirements of packaging and post packaging waste management. One example of this is the customer relationship with Confoil, which has worked closely with Alcoa Australia Rolled Products at Yennora to trial a number of different packing initiatives to improve waste management of both businesses.

Following a trial period, Confoil and Alcoa Australia Rolled Products have agreed catering foil will be delivered on returnable steel "trees". Previously, the foil had been packaged in wooden boxes and secured by steel straps. The steel trees are also used to finish the foil products in the annealing furnace, after cooling and inspection the coils are shipped to Confoil on the trees. For heavy gauge semi rigid container foil Confoil and Alcoa Australia Rolled Products have implemented the use of returnable steel pallets that have their own tension straps. This replaces using wooden pallets that have a shorter life cycle and require additional steel strapping, as well the timber pallets do not afford the same production protection as steel pallets. This saves up to 800 wooden boxes each year, as well steel straps to secure foil.

Twenty percent of our can stock is now delivered to customers on steel racks instead of on wooden pallets, which saves a total of 2,100 wooden pallets each year, as well as 4,200 steel bands, helping us to further reduce packaging.

land

The Land Management Framework for Yennora comprises:

- Land Management Program;
- Land Improvement Works Plan;
- Land Maintenance Plan: and
- Land Management Team.

The aim of the Land Management Program is to define and describe the leasehold land that is managed by Alcoa at Yennora in Western Sydney, to set broad policy and operational objectives for the land and present strategies for its responsible management in accordance with corporate and legislative requirements.

The Land Improvements Works Plan identifies discrete areas of land and details the improvement works, approximate costs, responsible persons and timing. The detailed works are designed and planned in accordance with the themes, objectives and recommendations in the Land Management Program.

noise management

Noise process source

Noise from Alcoa's operations emanate from a number of sources -

- Maintenance of equipment
- Vehicle and transport associated noise
- Furnace loading
- Test alarms
- Aluminium rolling operations.

Noise limits

Noise from Alcoa's operations is controlled by NSW EPA license conditions and the condition for the site is 48 decibels (dBA) at the boundaries of the nearest residence. Noise surveys conducted by registered noise consultants show that during normal operations the site operates within these limits.

Monitoring, minimising and controlling noise

The site received several noise complaints – the last in March 2001 - relating to the operation of transport on site, sudden production noises at the ingot mill and external telephone ringers. These have been addressed and no further complaints have been received. There is a corporate requirement that the site reduces noise as part of ongoing health and safety initiatives. The site has identified 10 priority areas of noise reduction and the site is on track to meet the target, a 40 percent noise reduction in 2005 over 2000 levels. Personal noise is monitored and noise in work areas mapped at Alcoa Australia Rolled Product's Yennora operations. Opportunities for noise reduction are investigated and measures such as noise suppression equipment and personal protective equipment (PPE) have been put in place to minimise noise.

facilities

Cleaning and Cut to Length Line Facility

Alcoa Australia Rolled Products has invested \$12.7M in a new cleaning and cut to length line at Yennora. This will enable Yennora to compete with the quality of imported products and change our product mix to focus on higher value products. The investment will help to ensure the future of the Yennora plant.

The line includes environmentally state of the art cleaning technology based on water rather than older hydro-carbon (oil) processes. This technology enables us to reuse and recycle water as well as provide greater energy efficiency for the cleaning line. There will be no increase in noise with the introduction of the cleaning line and there will be no additional emissions impact as the existing 40 year old lines will be shut down. The cleaning and cut to length line started operating in the first half of 2005 and we anticipate improved environmental performance over time.

Air Emissions

Sources of air emissions from the cleaning and cut to length line include hot water vapour (steam) and natural gas combustion emissions from the hot air heaters. Natural gas is the cleanest burning fuel available and both these sources will be vented through a stack. The air emissions generated have negligible impacts on air quality due to the absence of pollutants.

Noise Emissions

The operation of the cleaning and cut to length line has not increased levels of noise at residential areas. The site will maintain compliance with the NSW EPA Licence conditions.

End Line

The End line, located at the corner of Eighth Avenue and Pine road, prepares aluminium sheet for use by the can manufacturing industry. The line was closed in 1996 due to lack of market demand at the time. The market for this product has recently been revitalised and Alcoa Australia Rolled Products is restarting its End line in 2005. The purpose of the End line is to treat the aluminium to enable the adhesion of coatings applied by can manufacturers. Restarting the End line required an additional investment of \$6.7 million. The opportunity to restart the End line has provided us with an opportunity to incorporate energy savings into the new facility, such as the installation of sensor lights. The main environmental impacts will be:

Air Emissions

Source of air emissions from the can end line include hot water vapour (steam) and natural gas combustion emissions from the hot air heaters. Natural gas is the cleanest burning fuel available and both these sources will be vented through a stack. The air emissions generated have negligible impacts on air quality due to the absence of pollutants.

Noise Emissions

The operation of the can end line has not increased levels of noise at residential areas. The site will maintain compliance with the NSW EPA Licence conditions.

Waste Generation

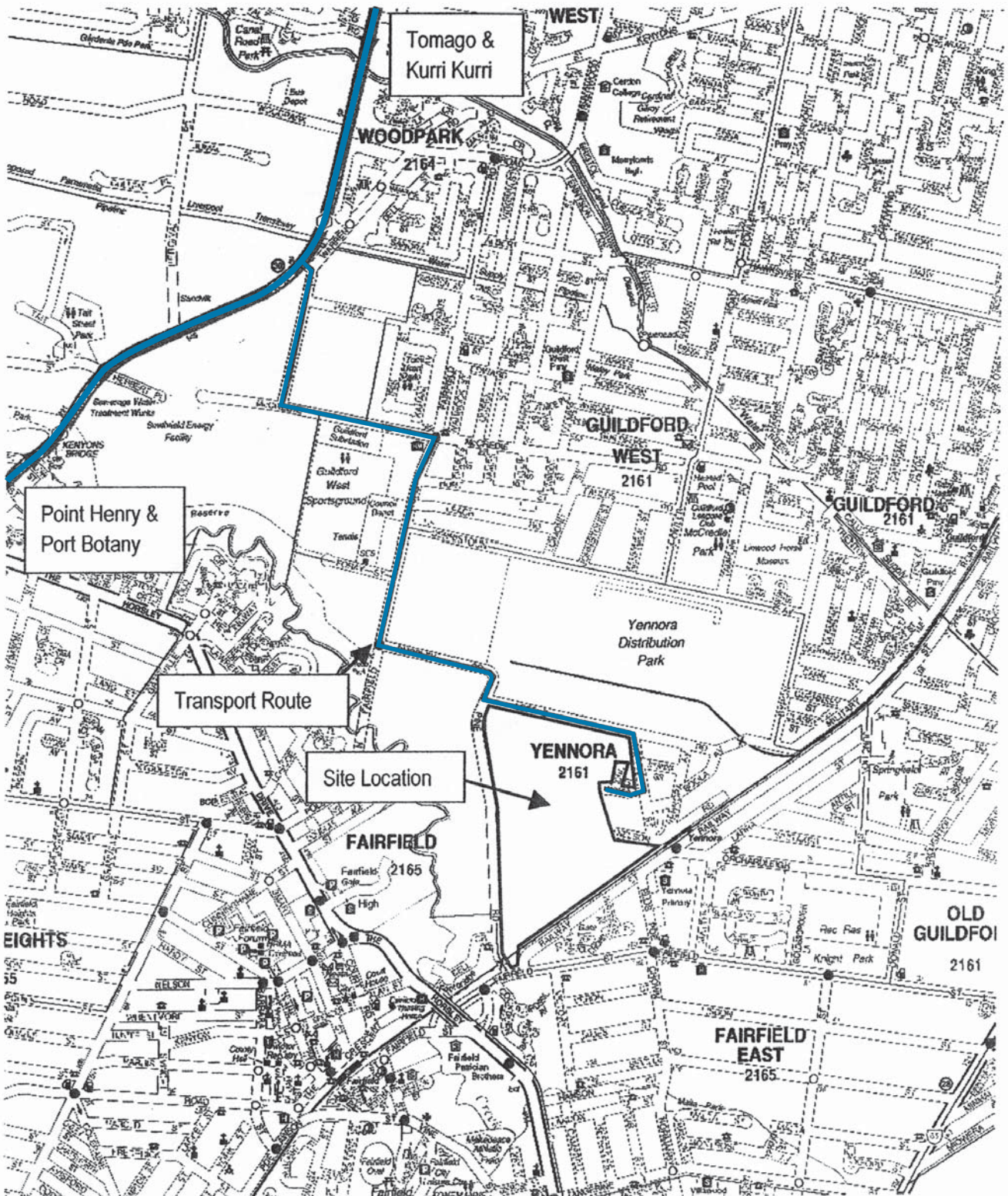
Liquid wastes (cleaning alkali and etching acid) will be managed in accordance with waste management regulations and internal controls and procedures.

transport

There are three aspects of transport that are regulated that require proper management by Alcoa Australia Rolled Products Yennora. They are:

1. Managing transportation of dangerous goods – or goods that are deemed as a potential risk while being transported. Goods in this category at Alcoa Australia Rolled Products at Yennora include aluminium dross and aluminium salt slag. Dross is a feedstock for the recycling process and dross originating from Victoria is treated as a waste of the primary aluminium process. Under its EPA license, the site at Yennora is permitted to import up to 5,000 tonnes of dross each year from its sister site in Point Henry, near Geelong in Victoria. The 1998 Regulation applies the Commonwealth Road Transport Reform (Dangerous Goods) Regulations as law in NSW, subject to minor modifications. The Regulations establish a system of licences and standards for the transport of dangerous goods by road and also apply the Australian Code for the Transport of Dangerous Goods by Road and Rail to such transport.
2. Interstate and intrastate waste tracking procedures. This includes managing the transport of dross from Victoria and salt slag to Victoria and other hazardous waste within NSW, such as liquid wastes.
3. Transport routes that trucks are permitted to take when entering and departing the site are prescribed by the Road Traffic Authority (RTA) and Holroyd City Council.

local transport route diagram



Comments and Feedback Form

questions

1. Were you satisfied with the information in the EIP? Yes No
 Comments _____
2. Was the EIP easy to follow/read? Yes No
 Comments _____
3. Did the EIP give you a better understanding of environmental initiatives at
 Alcoa Australia Rolled Products at Yennora? Yes No

comments

4. Were there any areas that you felt needed more detail/were left out? Yes No
 Comments _____
5. General comments _____

6. Are you happy for Alcoa Australia Rolled Products to contact you regarding
 your comments or specific query? Yes No

Name _____

Address _____

Contact Details Phone _____ Moblie _____

Email _____

Alcoa Australia Rolled Products is committed to community consultation.

We regard community consultation as a most important part of our environmental management plan, and we thank you for your input.

Your comments will help us to make this process more efficient in the future.

yennora EIP 2006-2007 Comments and Feedback Form

SENDER

REPLY
PAID
AUSTRALIA

COMMUNITY RELATIONS
alcoa australia rolled products yennora
Kiora Crescent
Yennora NSW

FURTHER ENVIRONMENTAL INFORMATION

Australian Greenhouse Office - www.greenhouse.gov.au

Minerals Council of Australia - www.minerals.org.au

EPA - www.epa.nsw.gov.au

Department of Environment and Conservation - www.epa.nsw.gov.au

National Pollutant Inventory – www.npi.gov.au

Glossary

AMBIENT	The surrounding environment
BERYLLIUM	Beryllium compounds can be found in mineral rocks, soil, oil and volcanic dust. Small quantities can be found in products such as personal computers, televisions, calculators and microwave ovens. Emissions to air can result from combustion of coal and oil in power plants.
CADMIUM	Cadmium is a naturally occurring element in the earth's crust. It is most commonly found combined with other elements such as copper and lead ores. The main sources of emission for cadmium & compounds are copper and lead smelting as well as power generation.
CARBON DIOXIDE (CO ₂)	Occurs naturally in the environment. Is a product of complete combustion (burning) of carbon-containing materials. Imperative role in animal and plant life respiration (breathing). Contributes to the greenhouse effect.
CARBON MONOXIDE	Carbon Monoxide is a colourless and odourless gas. It is emitted by motor vehicles, forest fires, garden waste and lawn mowing as well as from aluminium smelters, steel and oil refineries and electricity generators.
CHROME (III)	Chromium is a relatively common element found naturally in rocks, soil, plants, animals, volcanic dust oil and coal. The major industrial emission sources of chromium in Victoria are iron and steel manufacturing, motor vehicles, textile manufacturing, and combustion processes of oil and coal such as power stations.
CHROMIUM VI	Chromium (VI) compounds are not found in nature. Chromium is usually found as the Cr (III) form, as the mineral Chromite and in many soils. Chrome VI used to make bricks and linings for furnaces. Compounds are used for chrome plating (chromic acid), manufacture of dyes (soluble chromates), wood treatment and water treatment.
CLASS 3 INDICATORS	Class 3 Indicators are extremely hazardous substances because of their carcinogenic, teratogenic, mutagenic, highly toxic or highly persistent characteristics
CLEANER PRODUCTION	Methods of production aimed at not producing, or minimising waste
COPPER	Copper is a relatively common element found naturally in rocks, soil, plants and animals. It is typically used in electrical and plumbing applications. Copper is also used in a number of agricultural and gardening applications such as in fungicides, as well as paint and pigment in glass and enamels. The main industrial source of air emissions is metal fabrication, petroleum refining, motor vehicles, and combustion of various fuels. The major land emission is through sewage sludge.
EHS	An abbreviation for Environment, Health and Safety
EIP	An abbreviation for Environment Improvement Plan

EPA	An abbreviation for the Environment Protection Authority, a statutory body established under an Act of the New South Wales' Parliament in response to community concern about pollution.
FLUORIDE	Fluoride compounds are all related by containing fluorine. Fluorine is a naturally occurring element in the earth. It is usually found in the form of mineral fluorspar, CaF ₂ . It combines with hydrogen to make hydrogen fluoride. Hydrogen fluoride is used to make aluminium, chlorofluorocarbons, aluminium fluoride, sodium fluoride and other fluoride salts. It is used in the petroleum, chemical and plastics industries.
FLUOROPATITE	A common complex mineral consisting of calcium fluoride and phosphate.
FLUOROSPAR	A soft mineral (calcium fluoride) that is fluorescent in ultraviolet light; chief source of fluorine
GREENHOUSE GASES	Gases that contribute to global warming such as carbon dioxide and perfluorocarbons. These gases trap the radiant heat of the sun, allowing less of the radiation to be reflected back into space.
ISO 14001	The international standard for environmental management systems (EMS) and a framework for the overall management of environmental issues at an operation.
MANGANESE & COMPOUNDS	Manganese is very similar to iron in its physical and chemical properties, the chief difference being that manganese is harder and more brittle. Manganese exists mostly in the (II) oxidation state in natural compounds. It can also appear as manganese (IV) in manganese dioxide. Synthetic compounds are known in nearly all oxidation states between (III-) and (VII+). Manganese is predominantly used to produce ferromanganese, or metallic manganese, which is used in the production of steel to improve hardness, stiffness, and strength. It is used in carbon steel, stainless steel, high-temperature steel, and tool steel, along with cast iron and superalloys. Manganese finds further applications in a number of non-ferrous alloys, especially with aluminium, magnesium, copper and zinc.
MERCURY	Mercury, a naturally occurring element, is an odourless, very heavy, silver white, liquid metal. Mercuric chloride is an odourless, white powder or crystal. Mercury is used in its pure form in thermometers and barometers. Many batteries contain mercury. It is used in floodlights, streetlights, and other outdoor or powerful lights. It is also used as a catalyst in the chemical manufacturing industry. It is used to conduct electricity (i.e. thermostats). Mercury is used in dental amalgams.
METHANE	Is a colourless and odourless gas. Formed by the decay of vegetable matter and is the main constituent of natural gas.

NICKEL

Nickel is a silvery white metal that works well as a conductor of electricity and heat. It is often used in metal alloying such as for stainless steel, coins, jewellery, and batteries. The combustion of coal and other fossil fuels results in emissions of nickel compounds to air from shipping, aeroplanes, motor vehicles, power generation and backyard incinerators. Some manufacturing processes of motor vehicle parts components and iron and steel manufacturing also create nickel emissions.

NICKEL CARBONYL

Nickel Carbonyl is flammable and explosive. It is slightly soluble in water, but soluble in other organic solvents. Nickel Carbonyl is used in refining nickel ore, forming nickel films and coatings, as a catalyst in various chemical reactions, and in glass plating.

NITROUS OXIDE

Gas commonly referred to as laughing gas. One of the oxides of nitrogen.

NOX (oxides of nitrogen)

NOx is an abbreviation for the Oxides of Nitrogen.

Formed as a combustion product, generally when nitrogen in the air is oxidised in the presence of oxygen.

NOx are largely emitted by motor vehicles and energy generators but can also be produced by lightning, forest fires and the use of fertiliser in agriculture.

NPI

An abbreviation of National Pollutant Inventory, Australia's national database of pollutants emitted into the environment.

OPACITY

A measure of the particulates in stack gas emissions

PARTICULATE MATTER (PM10)

Particulate Matter (PM10) is dust particles of less than one hundredth of a millimetre. They are emitted by industry where there are any activities involving the movement of raw materials and combustion of fuels. They are also caused by lawn mowing, wood stoves, fires and cigarette smoke.

POLYCHLORINATED BIPHENYLES (PCB)

Polychlorinated biphenyls are mixtures of up to 209 individual chlorinated compounds (known as congeners). There are no known natural sources of PCBs. PCBs are either oily liquids or solids that are colorless to light yellow. Some PCBs can exist as a vapor in air. PCBs have no known smell or taste.

At Alcoa, PCBs were used as coolants and lubricants in transformers, capacitors, and other electrical equipment, such as light bulbs. Alcoa ARP at Yennora is working towards being PCB free.

POLYCHLORINATED DIOXINS AND FURANS

Polychlorinated Dioxins and Furans are generated in small concentrations as by-products of chemical manufacturing and incomplete combustion where raw materials contain trace amounts of chloride. Another source is for example the burning of medical waste.

**POLYCYCLIC AROMATIC
HYDROCARBONS**

Polycyclic Aromatic Hydrocarbons (PAHs) are a group of over 100 chemicals and usually odourless white or pale yellow-green solids. PAH's are formed by the incomplete combustion of coal, oil, petrol, wood, tobacco, charbroiled meats, garbage, or other organic materials. They are also found in asphalt roads and tar.

PRODUCT STEWARDSHIP

A product-centred approach to environmental protection. Also known as extended product responsibility (EPR), product stewardship calls on those in the product life cycle - manufacturers, retailers, users, and disposers - to share responsibility for reducing the environmental impacts of products.

SULPHUR DIOXIDE (SO₂)

A colourless, non-flammable gas with the chemical formula, SO₂. It is commonly used as a fruit-preserving agent, in wine making, as a bleach and as a fumigant for growing grains, grapes and citrus fruit.

**VOLATILE ORGANIC
COMPOUNDS**

Volatile Organic Compounds (VOCs) are the gases given off by a wide range of organic chemical compounds. Major sources of VOCs are motor vehicles, service stations and solid fuel burning in domestic heaters. VOC's can be released during the baking and forming of anodes during the aluminium smelting process.

YENNORA CONTACT DETAILS

Alcoa Australia Rolled Products
Kiora Crescent
Yennora
NSW

General switch number: (02) 9681 9555

MANAGEMENT CONTACTS

John Costley
Location Manager

Mark Davies
EHS Manager

ENVIRONMENTAL ISSUES HOTLINE: 1800 647 644

**IF YOU SMELL OR SEE SMOKE
OR HEAR NOISE FROM OUR SITE
THAT IS A NUISANCE, PLEASE
CONTACT THIS NUMBER 24
HOURS A DAY, 7 DAYS A WEEK.**

When this number is called, an investigation is instigated immediately to check the part of the plant in question to verify the condition of the plant. If required, immediate action is taken within 30 minutes of the concern being raised. The nature of the concern will determine what actions are taken.

The Environment Health and Safety Manager is notified of the call within one hour. A full report is made to the Location Manager and full investigation undertaken the next working day. Corrective actions implemented as appropriate. The Environment Health and Safety Manager will contact the person who raised the concern within 72 hours to explain what has happened following their phone call.