

alcoa in australia

2001 COMMUNITY, ENVIRONMENT, HEALTH AND SAFETY REPORT



2001 Sustainability Report

02

This report summarises Alcoa in Australia's community, environment, health and safety activities during 2001. The full financial results can be obtained from the Alcoa Inc. annual report at www.alcoa.com/global/en/home.asp.

During 2001, Alcoa participated in the Mining, Minerals and Sustainable Development Project (MMSD), an independent two-year project of research and consultation seeking to understand how the mining and minerals sector could contribute to the global transition to sustainable development. As well, Alcoa is a member of the World Business Council for Sustainable Development, a coalition of 150 international companies united by a shared commitment to sustainable development via the three pillars of economic growth, ecological balance and social progress.

managing directors' overview

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Alcoa's operations in Australia make a significant contribution to the nation's quality of life. We provide direct employment to more than 6,300 people, and indirect employment for many more. Each day we contribute more than nine million dollars to Australia's export earnings. This translates to additional government infrastructure such as schools, hospitals and jobs.

Alcoa's business challenge is to provide alumina and aluminium to our Australian and overseas customers in the most environmentally efficient manner possible, both at a local and a global level. We also take into consideration the contribution aluminium makes over time to the global environment. An example of this is the increased use of aluminium in vehicle construction that reduces vehicle weight and consequently reduces the energy used and the associated environmental impacts over the life of the vehicle. Alcoa Kaal Australia is a major producer of can sheet for aluminium cans in the domestic marketplace and is also the largest recycler of aluminium scrap cans in Australia. During the recycling process it takes only about five per cent of the original energy requirement to remanufacture an aluminium ingot, making aluminium recycling both environmentally and economically sustainable.

During 2001, our employees delivered some excellent results in safeguarding our environment. In Victoria, at our Portland smelter, a dedicated team of employees and researchers has solved a long-standing problem – the disposal of spent pot lining. In the world-class new process, fluoride is extracted from spent pot lining for re-use, while remaining material is turned into a synthetic sand – a product cleared by the Victorian Environmental Protection Authority for unrestricted use in several applications.

Our bauxite mining group in Western Australia has achieved a long-held Alcoa aim to restore 100% species richness to mined areas that have been rehabilitated. A great deal of resources, teamwork and innovative application of technology has been allocated to reaching this target, one that will result in a self-sustaining Jarrah forest ecosystem.

We have continued to deploy the Alcoa Business System initiative that involves our employees redesigning their work processes and work places continuously to make them safer. In 2001, Alcoa World Alumina Australia employees had their safest year ever, while at the same time delivering the company's most profitable year, returning \$1,023 million.

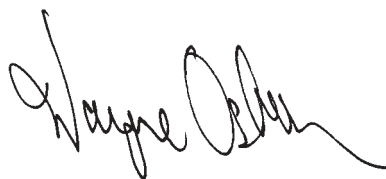
We remain committed to our employees and were proud to receive the Gold Award for the highest overall performance in the 2001 Australian Chamber of Commerce and Industry National Work and Family Awards for 2001.

Alcoa continues its long tradition of engagement with the community. We are involved with a global initiative for locations to hold at least five significant annual events as part of Alcoa's global "Neighbours" program. Company sponsorships continued through 2001, with programs such as CREST gaining a \$50,000 boost to help extend the creative and innovative student science program through a new Australian-wide partnership with CSIRO Education. We continued our successful Landcare projects in both Western Australia and Victoria in 2001, having spent \$15 million since it was established in 1991.

We remain committed to addressing community concerns. One of our biggest challenges during the year was issues surrounding the Wagerup Refinery. Concerns about air emissions were highlighted by the community and were frequently published in the local media. In response to these concerns, major work was undertaken to upgrade refinery emission controls and we have undertaken many studies to help understand the issues and opportunities for further improvement. We will continue to approach the resolution of any issues raised by our communities in an honest and inclusive way.

To reflect this, Alcoa has committed to openness in our reporting processes. By 2004, all of Alcoa's business units will be required to deliver a performance report detailing our economic, environmental and social programs based on the Global Reporting Initiative guidelines.

We still have many challenges to face, but with the help of our dedicated and talented workforce, we are confident that these challenges will be met and even surpassed.



Wayne Osborn
MANAGING DIRECTOR
ALCOA WORLD ALUMINA AUSTRALIA



Shirley In't Veld
MANAGING DIRECTOR
ALCOA KAAL AUSTRALIA

vision

At Alcoa, our vision is to be the best company in the world – in the eyes of our customers, shareholders, communities and people.

values

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We expect and demand the best we have to offer by always keeping Alcoa's values top of mind:

Integrity Alcoa's foundation is our integrity. We are open, honest and trustworthy in dealing with customers, suppliers, co-workers, shareholders and the communities where we have an impact.

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

Customer We support our customers' success by creating exceptional value through innovative product and service solutions.

Excellence We relentlessly pursue excellence in everything we do, every day.

People We work in an inclusive environment that embraces change, new ideas, respect for the individual and equal opportunity to succeed.

Profitability We earn sustainable financial results that enable profitable growth and superior shareholder value.

Accountability We are accountable – individually and in teams – for our behaviours, actions and results.

A comprehensive set of principles and human rights which support our values and vision and can be found at www.alcoa.com.au.

organisational profile

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Alcoa of Australia Limited

ACN 004 879 298

Ownership – 31 December 2001

Alcoa International Holdings Company	60.00%
WMC Limited	39.25%
QBE Securities Pty Limited	0.50%
QBE Nominees Pty Limited	0.25%

Refining

Kwinana – rated capacity	1.9 million tonnes
Pinjarra – rated capacity	3.2 million tonnes
Wagerup – rated capacity	2.2 million tonnes

Smelting

Point Henry – rated capacity	185,000 tonnes
Portland – rated capacity	345,000 tonnes

Alcoa owns 55 percent of the smelter at Portland.

Kaal Australia Pty, Limited

ACN 069 853 229

Ownership – 31 December 2001

Alcoa International Holdings Company.	50.0%
Kobe Steel Australia Pty Ltd	50.0%

Huck Australia Pty, Limited

ACN 050 277 819

Ownership – 31 December 2001

Cordant Technologies Holding Company	100%
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Alcoa Wheel Products Australia Pty Ltd

ACN 092 772 668

Ownership – 31 December 2001

Alcoa International Holdings Company	100%
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[Click here for a map of Australian Operations](#)

economic

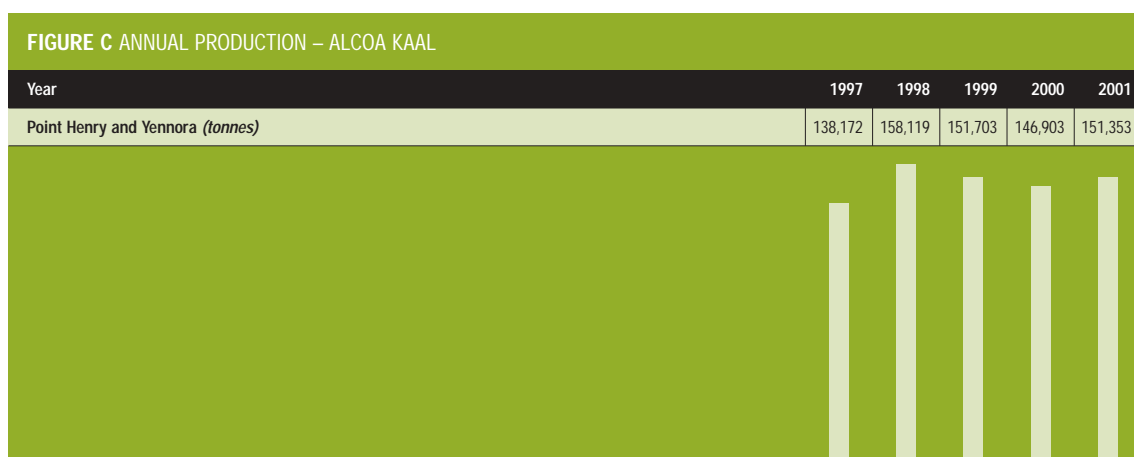
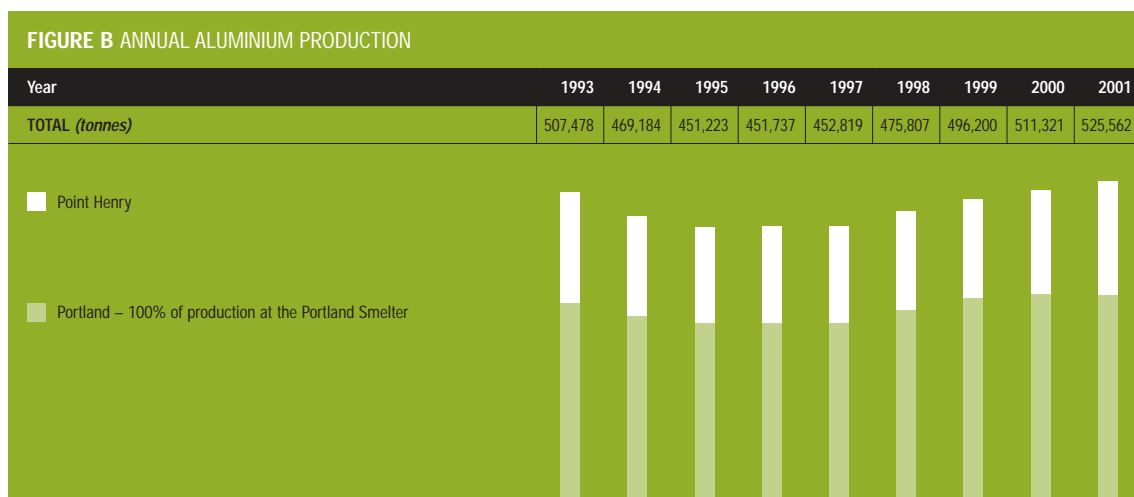


FIGURE D NET PROFIT AFTER TAX



FIGURE E RECEIPTS

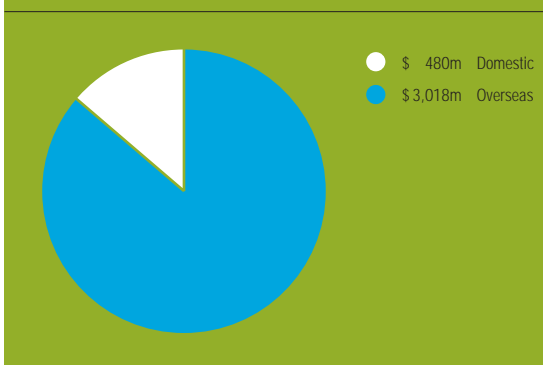


FIGURE F PAYMENTS

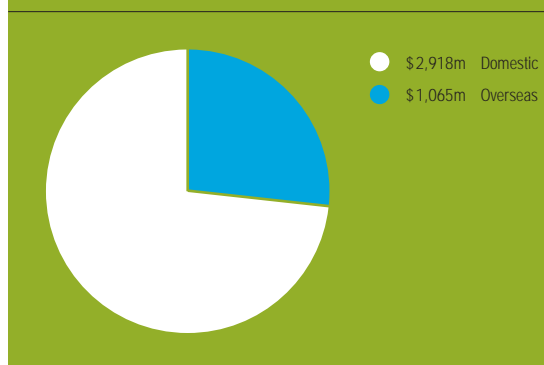


FIGURE G DISTRIBUTION OF THE 2001 REVENUE DOLLAR



FIGURE H DOMESTIC DISTRIBUTIONS / OVERSEAS DISTRIBUTIONS



Ten year summary

	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992
From the Balance Sheet (\$ millions)										
Current Assets	918	787	612	572	545	612	777	687	1,118	1,101
Property, Plant, and Equipment (1)	2,407	2,516	2,402	2,364	2,231	2,221	2,249	2,242	2,243	2,162
Investments	10	12	24	27	25	20	20	20	16	10
Total Assets	3,840	3,824	3,521	3,108	2,963	3,017	3,216	3,111	3,519	3,414
Current Liabilities	656	715	514	463	433	388	477	380	573	458
Long Term Debt	0	95	415	410	347	164	169	193	444	489
Shareholders' Equity	2,317	2,147	1,765	1,637	1,589	1,879	1,972	2,024	1,997	1,328
From the Profit and Loss Statement (\$ millions)										
Sales Revenue	3,441	3,481	2,670	2,628	2,588	2,532	2,379	2,057	2,188	2,173
Depreciation & Amortisation of Fixed Assets	164	157	153	146	146	172	161	154	148	137
Net Interest Expense	23	42	25	11	10	0	5	-5	-8	-37
Income Tax Expense	451	453	244	205	226	206	189	116	195	173
Net Profit After Tax (2)	1,023	882	529	423	386	388	313	268	449	259
Dividends	800	500	400	375	380	480	340	240	380	260
Statistics										
Capital Expenditure (\$ millions)	115	103	194	298	169	180	194	118	237	245
Number of Employees (year end)	5,515	5,379	5,232	5,245	5,342	5,445	5,929	5,898	6,321	6,397
Debt to Invested Capital Ratio	0.00	0.04	0.19	0.23	0.19	0.09	0.10	0.09	0.22	0.21
Return on Average Shareholders' Funds (%) (2)	45.8	45.1	31.1	26.2	22.3	20.2	15.7	13.3	22.9	13.4
Return on Average Assets (%) (2)	26.7	24.0	16.0	13.9	12.9	12.5	9.9	8.1	13.0	7.6

(1) INCLUDES EFFECTS OF REVALUATIONS IN 1977, 1979, 1981 AND 1995 UNTIL 2000, 2001 ONWARDS RETURNED TO HISTORIC.

(2) AFTER ABNORMAL ITEMS.

environment

Portland's 'Smelter in the Park'

Portland Aluminium sits on just over 600 hectares of land, with smelting operations, ancillary buildings and roads occupying around 100 hectares.

Traditionally, the remaining land would have been used as a buffer zone around the operations, to keep the public at arm's length. Instead, extensive effort has been applied to develop this land into a 'Smelter in the Park', which demonstrates through deeds rather than words the company's commitment to protecting the environment, and connecting with the community.

To turn the vision into reality, Portland Aluminium worked with the University of South Australia to create a master plan for the area. The plan included areas for relaxation and for the community, areas for learning and research, habitats for wildlife, and landscaping for operating areas within the smelter.

Since public tours of the smelter operations and parklands began in 1990, Portland Aluminium has had more than 108,000 people – school groups, tourists to our region, business, community and government groups, conservation and environmental organisations, researchers and scientists – visit the plant.

Portland Aluminium's 'Smelter in the Park' is recognised worldwide as a benchmark in industrial and environmental harmony. This includes acclaim from the Wildlife Habitat Enhancement Council, which awarded the project the first certification as a viable habitat granted outside the United States.

Pinjarra refinery's integrated land management

The 600-hectare Pinjarra refinery and residue storage area lie within 5,600 hectare of Alcoa farmlands, some of which borders the nearby township of Pinjarra. The Western Australian Government awarded the refinery a Golden Gecko Award in 2001 for its commitment to environmental management.

In 2000, the refinery integrated its environmental planning with the farm's management plan to produce a document that considers the ecological, commercial and amenity needs of people, flora, fauna and the agricultural operations.

The Western Australian Department of Mineral and Petroleum Resources described Alcoa's winning submission to the Golden Gecko Awards in the following terms:

"For the thorough and innovative work conducted by the company as part of its Pinjarra Alumina Refinery Land Management Program.

Alcoa has consulted and communicated extensively with the local community and the resulting systems and practices being developed by the company will greatly improve the surrounding area, including historic Fairbridge Village. Through the program, the land will be returned to a range of useful activities in accordance with the wishes of the local community."

The areas of significance that are addressed by the Landscape Management Plan include:

- refinery landscaping.
- bauxite residue demonstration area.
- wetlands streamlining and ecological corridors.
- remnant native vegetation and flora protection (including rare species).
- weed and vermin control.
- community involvement.
- cultural heritage (Aboriginal and historic Fairbridge Village).
- timber plantations.
- Alcoa Farmlands – best farming and landcare practice.

Anglesea Heath conservation area

Alcoa World Alumina Australia operates the Anglesea power station and coal mine that has been supplying power to the Point Henry aluminium smelter near Geelong since 1969. The 160-megawatt power station currently supplies around 41% of the total electricity needs of the \$300 million export smelter and rolling business and has 110 direct employees.

The power station and coal mine activities in Anglesea currently occupy about seven per cent of the 7221 hectares of a mining lease, granted to Alcoa, by the Victorian State Government under the Mines (Aluminium Agreement) Act 1961. The land leased from the State Government comprises the area used for mining and power generation, and the remainder is known as the land for conservation.

The land for conservation consists of a 6689-hectare area of public land, located north of the coastal township of Anglesea. The area offers one of the most diverse and spectacular areas for flora, scenic landscape and wildlife communities in Victoria. The National Estate listing of much of the area recognises the area's contribution to significant natural places, not only within Victoria but also in Australia.

A remarkable number of flora species exists within a relatively small area with more than 620 species, or approximately one quarter of the total Victorian flora. Over a quarter of Victorian orchid species are found in the lease area with more than 80 species and five hybrid species having been recorded.

A unique agreement between Alcoa and NRE signed in November 2000, allows government and industry to jointly manage the non-mining part of the lease and ensure that this important area is protected. It is the first Victorian case of a conservation agency and a mining company coming together to form a cooperative partnership to manage an area for biodiversity conservation.

This non-mining area has been named the Anglesea Heath. Alcoa funds a Parks Victoria Ranger who is based on site at Alcoa's operations. In the next year Alcoa plans to employ an Environmental Project Officer to assist in the protection of the Heath and officially launch the management plan that is currently in draft form.

The management of the Anglesea Heath is guided by a community-based consultative committee, including representatives from Alcoa, Parks Victoria, Surf Coast Shire, the Anglesea Aireys Inlet Society for the Protection of Flora and Fauna, the Geelong Environment Council, and the School of Biology and Chemical Sciences at Deakin University in Geelong.

Greenhouse gas emissions

Alcoa believes that available evidence indicates greenhouse gas emissions from human activities affect climate. We recognise that the risk of significant climate change is an issue of vital importance requiring action. Globally we have agreed to reduce our direct greenhouse gas emissions on a worldwide basis to 25% below our 1990 baseline by 2010.

(See Figure I)

In Australia we have achieved a steady improvement in the emissions intensity of aluminium production since 1990 of around nine per cent. A dramatic reduction in the internal greenhouse emissions intensity of aluminium production was achieved at our Victorian smelters during the early to mid 1990s – due to major improvements in the control of the ‘anode effects’ that generate PFC (perfluorocarbon) gases.

Since 1990, our energy efficiency across our three Western Australian alumina refineries has also improved by eight per cent. An equipment improvement program is being developed for existing refinery operations, with the aim of achieving best performance energy returns from such equipment.

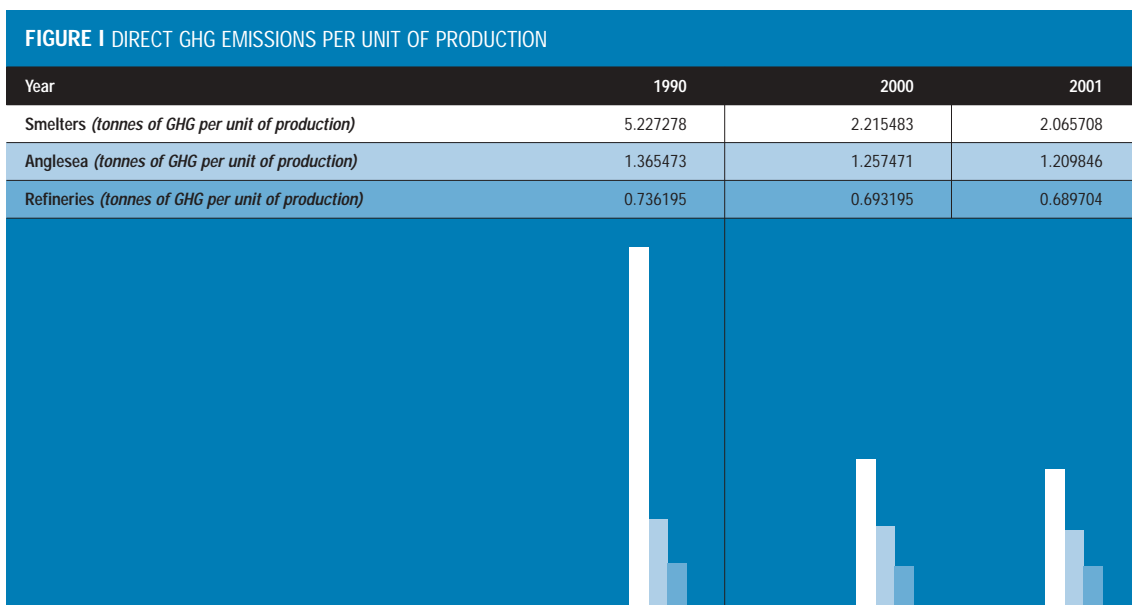
Extracting alumina from bauxite is energy intensive. Using energy efficiently is a primary concern in the design, operation and improvement of our production facilities.

We are currently setting further emission reduction goals for beyond 2002. Because our facilities are already operating at comparatively high energy efficiencies, we expect only modest incremental improvements in emissions intensity.

(See Figure J)

Greenhouse Challenge

Our Victorian smelters joined the Greenhouse Challenge program on its inception in 1996, through a framework agreement between the Commonwealth Government and the Australian Aluminium Council. Our alumina refineries joined the program in the following year through a subsidiary agreement. All alumina refineries and aluminium smelters in Australia are included in these agreements. We have maintained an inventory of our greenhouse gas emissions,



based on Greenhouse Challenge methodology, dating back to 1990, and participated in the program's pilot verification project.

In 2001, work continued on a variety of major Greenhouse Challenge projects. These focused on continuous improvement in energy efficiency and best practice technology to reduce greenhouse gas emissions. The projects included optimisation of the new evaporation technology installed at the Wagerup Refinery and improved energy efficiency of the electrolytic cells at the Portland Aluminium Smelter. Most future opportunities for reduced greenhouse gas emission intensity will be in continuous improvement of our current technology and process control for emissions and energy efficiency.

Energy efficiency best practice

Along with other member companies of the Australian Aluminium Council, Alcoa contributed to a sector study on energy efficiency best practice in the Australian aluminium industry, undertaken by consultants for the Commonwealth's Department of Industry, Science and Resources and published in 2000.

A range of cleaner production initiatives in WA and Victoria including a new 'regional synergies' project with other industries at Kwinana, have the potential to significantly reduce greenhouse gas emissions from Alcoa and/or partner facilities. One project currently at an advanced stage of development involves the use of carbon dioxide from a neighbouring facility to substantially lower the alkalinity of bauxite residue generated at our Kwinana refinery. As a result of the chemical reactions involved, the carbon dioxide is permanently sequestered with the residue deposit. The commercial viability of this project is currently being evaluated.

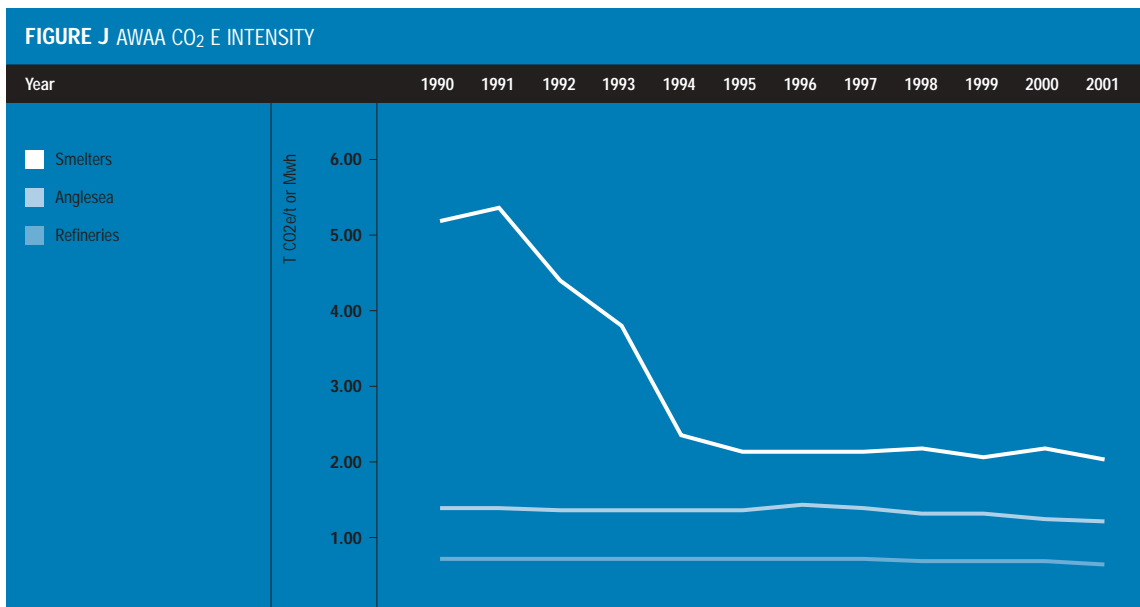
Ozone

The federal Ozone Protection Act 1989 and associated State legislation and regulations introduced comprehensive controls over the manufacturing, import, export and use of ozone depleting substances.

To ensure Alcoa fully complied with these regulations, a significant reduction in the use of ozone depleting substances was initiated in 1995 by removing all halon fire extinguishers, resulting in approximately 10,740 kg being deposited in the Commonwealth Halon Bank. All air conditioners and refrigerators are only serviced and degassed by qualified licensed contractors. In 1999 qualified contractors also decommissioned all fixed halon fire control systems resulting in another 1300 kg being disposed of appropriately. All Alcoa plants in Australia are working towards the complete removal of all ozone depleting substances listed in Appendix 2 of the Ozone Protection Policy.

Generator efficiency standards

In 1999 we contributed data to a national benchmarking study on energy efficiency in power generation undertaken by the Australian Greenhouse Office. These and overseas data have been used by the AGO to determine 'best practice' energy efficiency performance bands for different categories of power generation facilities. The thermal efficiency of all three of our WA refinery power stations ranked among the top five of the 69 power stations included in the survey. At Anglesea, it was found that the current operating point was about three per cent better than the 'best practice' efficiency line.



Alumina refinery atmospheric emissions

Located 130km south of Perth in Western Australia, the Wagerup alumina refinery has been the subject of community, government and media scrutiny on the impact of atmospheric emissions, particularly odour, since 1997. In response to community concerns, the refinery has upgraded emission controls and undertaken many studies to help understand the issues and opportunities for further improvement. Early monitoring indicated that gaseous emissions were unlikely to exceed any workplace or community health guideline levels however the odour emissions were resulting in amenity impacts in the community of Yarloop that sometimes exceeded the Environmental Protection Authority's odour guidelines (for new projects).

In response to community concerns, in June 2001 the Department of Environment (DoE) set tough prescriptive conditions for the 2001/2002 licence which required an intensive ongoing program of monitoring and emission reduction measures. A concerted effort by all in 2001 resulted in Alcoa meeting the tough environmental licence conditions imposed by the WA government in February 2002. The new strict measures to reduce the impact of air and odour emissions from the refinery had to be in place by 30th June, 2002, or production from the plant was to be cut to an equivalent 2.2 million tonnes per annum. Meeting this deadline was extremely important for the company in fulfilling its commitments to the Government and the community. The DoE operating licence conditions called for a reduction in the impact of odour from the refinery's calcination process, and a reduction in oxides of nitrogen (NO_x) emissions from its power station.

To achieve this, Alcoa undertook a \$25 million major capital works program. The effort by employees, contractors and suppliers saw the projects completed

on time, eliminating a number of emission sources around the refinery, and delivering a significant reduction in the impact of refinery odours.

Aluminium smelting emissions

Throughout 2001, both Portland and Point Henry reduced emissions of sulphur dioxide per tonne of aluminium produced, continuing the overall reduction trend shown over recent years.

Sulphur dioxide emissions per megawatt hour of electricity generated from Anglesea power station continued to improve, with a further 3% reduction during 2001. The improvement resulted from an increase in efficiency of coal use and extensive boiler cleaning during a major maintenance shutdown.

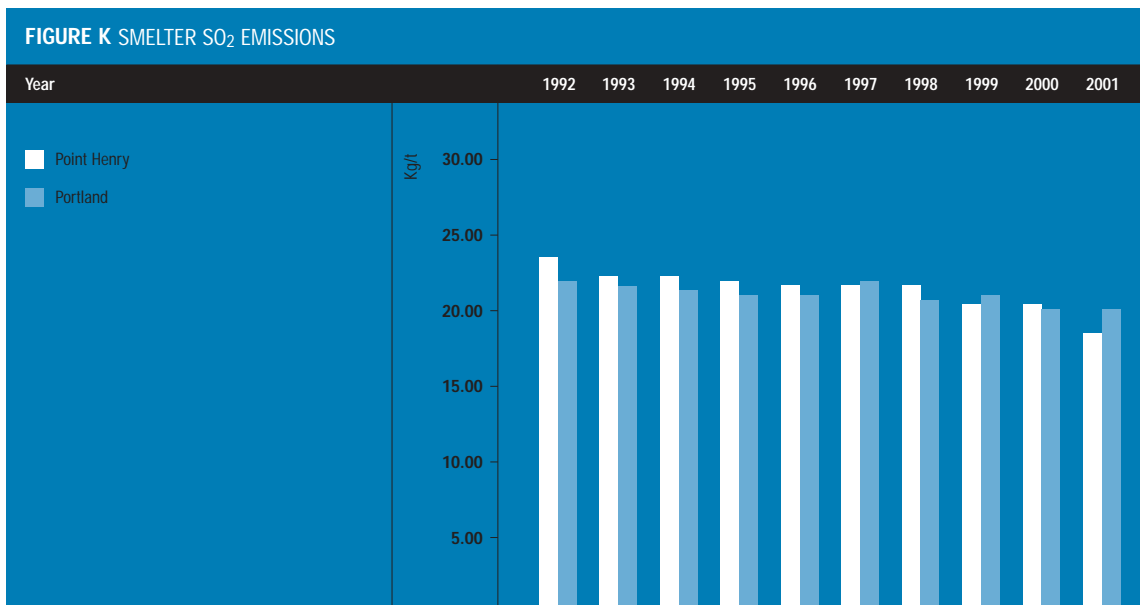
(See Figures K and L)

Emissions from the production of carbon anodes used in the smelting of aluminium were reduced during 2001 as a result of reliability programs undertaken on scrubber systems that intercept the fumes produced from the process. Temporary malfunctions of the scrubber systems have historically been the single largest source of environmental incidents at both smelters.

Portland has one of the lowest fluoride emission rates among Alcoa's 22 smelters globally. Further work is being undertaken to reduce fluoride emissions from the Point Henry smelter.

Cleaner production and waste management

Material management programs at all Alcoa facilities are complemented by waste management and cleaner production programs that continue to play significant roles in supporting sustainable operating systems.



These programs provide industry with the basic tools and formats to develop cost effective, environmentally acceptable and sustainable waste reduction systems.

Our cleaner production program has become the basis for keeping raw material in an operating system and out of the waste stream. Most industries today have used basic waste management principles to assess the cost of allowing resources to go down the drain or through various waste streams. The principles used by Alcoa include use of technology to minimise waste and pollution, improving operating practices and controls, reuse of by-products to reduce waste, integrating environmental risk assessment into all business decisions, and increasing the awareness of all employees, suppliers and customers so they are better equipped to contribute to the elimination of all forms of waste.

Alcoa's cleaner production program is part of our waste management. The success of both continues to assist in the reduction of operating costs and environmental risk while being a significant link in supporting the sustainability of the industry. The cleaner production programs involve major projects such as reducing scale build-up in refining systems, reuse of bauxite residue for soil amendment and eliminating noise and safety hazards.

Enhancements under considerations include:

- greater customer and supplier interactions on environmental issues; and
- environmental stewardship programs.

New use for spent pot lining

Spent pot lining (SPL) is generated when the carbon and refractory lining of aluminium smelting furnaces, or pots, reaches the end of its serviceable life. It is considered to be a hazardous waste in various countries as it contains significant quantities of absorbed fluoride along with traces of cyanide, sodium and other contaminants.

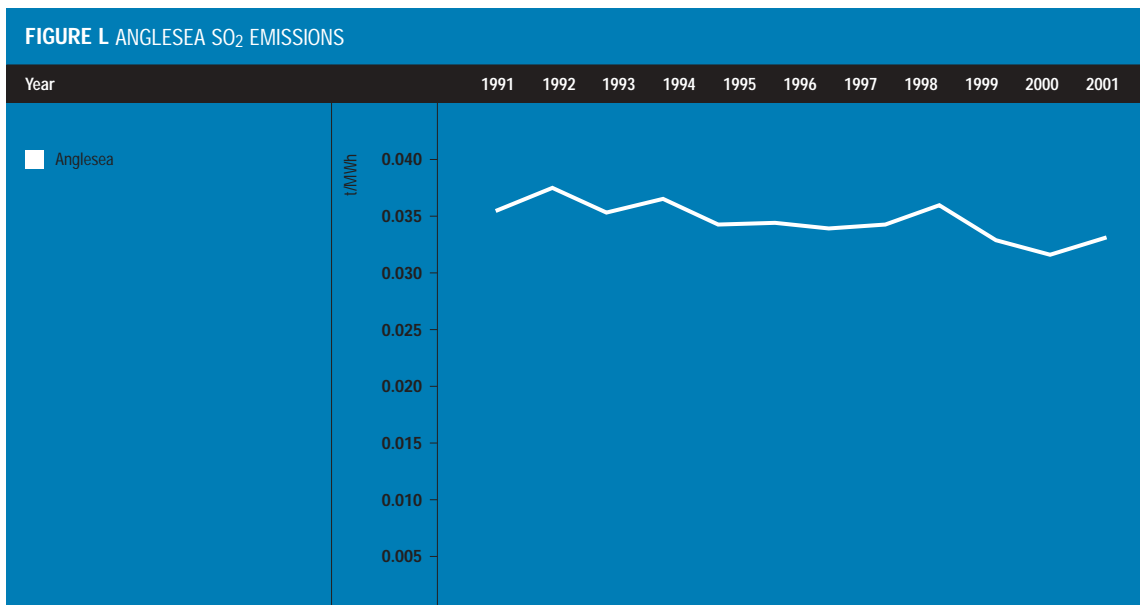
Fluoride is an essential and expensive ingredient in the smelting process. The ideal solution for managing SPL would therefore be to recover the fluoride it contains, while removing the traces of other, more hazardous materials. The difficulty in recycling SPL lay in the physical characteristics of the material and the corrosive nature of its by-products at the high temperatures required for separating the fluoride and destroying contaminants.

In 1995 the partners of Portland Aluminium – Alcoa, Citic and Marubeni – gave the go-ahead for a team to invest A\$26 million to seek a solution for problems associated with SPL. Using expertise from Alcoa, CSIRO, Ausmelt and other organisations, the team worked its way through the numerous technical challenges encountered in treating SPL and converted it into useful products. The process, named 'The Alcoa Portland SPL Process', produces aluminium fluoride and a granulated vitreous material referred to as 'synthetic sand'.

The Environmental Protection Authority of Victoria's subsequent approval for the process opens up opportunities for the end product, synthetic sand, to be used in commercial applications.

Lessening the impact of bauxite residue

Bauxite mined in the Darling Range contains about one third alumina which is extracted by our refinery process leaving behind a bauxite residue. Alcoa uses dry stacking methods to store bauxite residue at all three West Australian alumina refineries. Dry stacking involves taking the bauxite residue from the refineries, reducing the water content through thickening, and spreading the material in 0.5m layers for further drying via evaporation and drainage. Improved drainage at the base of the deposit is integral to the design. The residue's final density is about 30% higher than that achieved in the previously used wet disposal areas.



The higher density and lower water content in the deposit means less risk of seepage and groundwater contamination. It also brings greater strength that will allow the residue to be stacked higher, thereby reducing the area of land required, and a more stable surface condition.

The safe storage of mineral tailing is of major concern to the State Government. The trend towards adopting dry stacking techniques is seen as significantly reducing risks. Dry stacking is strongly supported by the Office of Major Projects, Western Australian Department of Industry and Resources.

Dry stacking is now used at all three of Alcoa's Western Australia refineries. Similar processes are also in use at other Alcoa facilities around the world, including in Suriname, Spain and the United States (Texas). We have also shared the technology openly with other alumina companies and other minerals industries by presenting papers at technical conference, hosting visits and meeting with technical specialists.

Ongoing challenges include dealing with past groundwater contamination and reducing the risk of future contamination, managing dust emissions to meet tightening regulations and higher community expectations, reducing visual impact, and resolving issues associated with potential land use conflicts. While dry stacking is a major step towards more sustainable residue management, significant challenges remain. Some groundwater contamination has occurred underneath the older Kwinana Refinery residue areas. As part of our long-term environmental management strategy, we have in place an extensive groundwater monitoring network and several recovery systems which allows us to contain and extract this contaminated groundwater and re-use it in our refining process. We monitor groundwater beneath and adjacent to all our refineries to ensure that groundwater contamination does not cause adverse impacts on the external environment or our neighbours.

We are investigating processes to reduce the alkalinity of residue, including the use of waste carbon dioxide. A major pilot trial for residue carbonation is underway at Kwinana during 2001. It is yielding results which will allow full assessment of this technology for future full scale implementation. We are continuing efforts that now span 25 years to find alternative uses for the bauxite residue by-products so that it becomes a resource rather than a waste. The use of Alkaloam to amend sandy soils on the Swan Coastal Plain is now well established under the sponsorship and direction of Agriculture Western Australia. Ongoing monitoring has confirmed the benefits to agricultural production and the broader environment.

Water use and conservation

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Alumina refining requires a considerable amount of water. During 2001 Alcoa's Western Australian refineries used 20,500 megalitres and the bauxite mines 845 megalitres of water.

The major sources of Alcoa's water are either from deep bores developed by the company, or from site reservoirs, which collect runoff from Alcoa's property. The remaining plant requirement is recycled water. After this water has been used in the process, it is piped with bauxite residue to the residue storage areas, collected via a network of under-drains, and, with rainfall runoff from the plant sites and residue areas, recirculated back in to the refinery.

As a result of our water conservation efforts, nearly half of the water used by Alcoa's Australian operations is now from low-grade sources. We intend to continue to promote this trend alongside the emphasis to reduce total volumes consumed.

In our Victorian and New South Wales operations, water is obtained from bore fields or from Government water supply agencies. With the exception of Anglesea power station (3,958 megalitres), water consumption by these operations is minor by comparison with alumina refining. Anglesea power station obtains water from its own bore field.

As a direct result of near drought conditions and very poor run-off into dams in the South West of Western Australia, Alcoa's operations undertook a series of water audits at its locations and implemented programs to reduce consumption and minimise waste. These efforts will continue into 2002.

The driving principles in auditing our water use have been:

- reduce use of high quality fresh water from public water supply sources; and
- decrease the total use of water, especially good quality water, by the operations.

Some of the initiatives undertaken include:

- replacing domestic quality fresh water in cooling towers with bore water;
- reducing the levels of water used on gardens;
- installing additional water meters to track losses through the pipes;
- identifying high water users on sites and developing local solutions to lessen demand;
- using commercial dust suppressants on mine roads to lessen reliance on water as a suppressant;
- using household sewage gray water supplied by the Water Corporation to replace some fresh water in our alumina processing circuits (at Pinjarra);
- changing ways in which bauxite spillages are removed; and
- developing water conservation packages for work crews.

Compliance

Alcoa's Australian operations are subject to environmental regulation. All our Western Australian operations are licensed under the WA Environmental Protection Act 1986. The Victorian Operations are licensed under the Victorian Environmental Protection Act 1970 and are regulated by the State Environmental Protection Policy. The Point Henry and Portland smelters are recipients of an accredited licence under Victoria's environmental licensing system.

In 1995, Alcoa proactively produced a guidance manual to assist its production facilities align their systems with requirements of the ISO 14001 Environmental Management Systems Standard, then being developed by the International Standards Organisation. In early 1997, our Kwinana refinery became the first large industrial facility in Australia, and the first alumina refinery in the world, to be fully ISO 14001 certified.

All our Western Australian operations achieved full ISO 14001 certification by the end of 2001. In Victoria, both smelters now have accredited licences and they, along with Angelsea power station, aim to achieve ISO 14001 certification by the end of 2002.

We have set a goal that by 2004 all our operations will achieve and maintain 100% compliance with all applicable environmental laws and regulations. We also strive to attain our own, more stringent, internal environmental standards. To achieve this, we are improving our environmental management systems, upgrading treatment facilities, identifying risks of non-compliance incidents and installing levels of protection to prevent them from occurring.

Alcoa's due diligence reporting system identified all of the breaches made in 2001 (outlined in the table below), and all relevant statutory authorities were appropriately notified. No significant environmental impact resulted from any of the breaches and solutions to the problems have either been implemented or are in the process of being implemented.

New non-compliance incidents 2001

Operation	Description of incidents
Anglesea power station	Asbestos disposal procedures not fully in accord with licence conditions.
Bunbury port terminal	Likely exceedance of applicable noise limits. Rectified from October 2001.
Hedges gold mine (internal)	Decant water from a decommissioned tailings dam escaped from a ruptured pipeline into a dry streambed on Alcoa property. There was no detectable environmental impact. Decant and pipeline systems have been upgraded and security and monitoring systems improved.
Willowdale mine	Likely exceedance of applicable noise limits.
Refineries	At Wagerup refinery turbidity levels at a monitor point were not measured for a period of time due to instrumentation problems. The situation has been rectified. Monthly potential noise non-compliance incidents reported for Wagerup and Pinjarra. Long term programs are in place to achieve full compliance.
Smelters	<ul style="list-style-type: none"> • Fourteen temporary malfunctions of both smelters' carbon bake systems resulted in power outages and equipment failures. A major program to upgrade monitoring and control systems for the carbon bake scrubber has been completed at Point Henry and is soon to be completed at Portland. • At Portland, on one occasion, fluoride emission levels from one potroom exceeded licence limits. • A Point Henry landfill site encroached on public land. • Zinc levels in stormwater exceeded SEPP for Waters of Victoria.
Alcoa Kaal Point Henry rolling mill	At the rolling mill at Point Henry, total suspended solids levels in the stormwater drain exceeded EPA limits.

Noise abatement

As described in previous public reports, surveys undertaken at several of our Western Australian operations indicated non-compliance or possible non-compliance with new environmental noise regulations. Noise abatement programs have been implemented at Willowdale mine and Bunbury shipping terminal and noise abatement work is continuing at the Pinjarra refinery.

An extensive noise abatement and monitoring program at Wagerup refinery has substantially reduced noise levels from the main sources within the plant, but a small number of near neighbours continue to be impacted by noise above the applicable night-time limit of 35dB. Discussions have begun with affected neighbours on measures that could be implemented at their properties rather than in the refinery, which may range from architectural and landscaping measures to purchase of the property. An application for a variation to the applicable noise limits has also been lodged with the regulatory agency.

Earlier modelling work at our Kwinana refinery indicated compliance with the noise regulations. However, a recently completed study that covers noise emissions from the whole industrial area suggests that the refinery may be a minor contributor to localised breaches of applicable noise limits east of the plant. Member companies of the Kwinana Industries Council, including Alcoa, are addressing noise management options with the regulatory agency. We are also evaluating noise abatement opportunities at the refinery and its bauxite residue handling operations.

Accredited and best practice licences

In 2001 our Portland smelter joined Point Henry in being granted an accredited licence by the Victorian EPA. To qualify for an accredited licence, facility operators must meet a number of stringent requirements including the development, with community input, of an environmental improvement plan, and independent verification by an accredited auditor of the adequacy of the facility's environmental management system. Progress on the environmental improvement plan must be reported annually to the community.

Kwinana refinery was the first facility in Western Australia to be granted a Best Practice Environmental Licence. In 2001 the best practice licence was retained following a thorough independent review required triennially as a condition of the licence.

Alcoa audit at Wagerup

A voluntary internal Alcoa integrated audit was undertaken at Wagerup refinery in January 2002 to re-evaluate the performance against internal standards in two key areas. In an attempt to address the local community concerns about air emissions from the refinery, the air pollution control component of the audit

was undertaken by an independent consultant rather than by Alcoa employees from another location. The refinery met the requirements of a 'good' grading for both air pollution control and water/wastewater management.

Independent audits and reviews

An independent audit, led by a registered senior environmental auditor from Quality Assurance Services and including representatives from the local community, local government and the Department of Environment, was undertaken as part of a triennial review of Kwinana refinery's best practice licence. The audit report confirmed that the refinery was achieving best practice in the designated aspects of its environmental performance and recommended that the licence be retained.

Regulatory agencies inspected both bauxite mines in 2001 and early 2002. The Huntly mine was assessed as being well managed and in compliance with all licence conditions. Willowdale mine was in compliance with its licence conditions except for a number of breaches of hydrocarbon limits in a holding pond during 2000. Investigations suggest that the elevated hydrocarbon levels were related to natural biogenic hydrocarbon levels in a local stream used to top up the holding pond during summer, rather than the performance of the mine's wastewater treatment system. An alternative methodology is being sought for assessing hydrocarbon levels.

safety and health

Alcoa's Western Australian and Victorian operations have the target of zero workplace lost work day injuries by 2004.

There were no fatalities at the Australian operations in 2001. Work continued at all sites on Alcoa's global fatality prevention program. Locations have identified their top 10 potential fatality issues and implemented plans to address these issues on a priority basis.

In the late 1990s, Alcoa in Australia identified five important safety issues with fatality potential. These included confined space entry, tag-out – lock-out, electrical safety, mobile equipment and falls prevention. A corporate self-assessment process is employed at each site to evaluate performance against a set of expectations.

2001	Victorian Operations	Western Australian Operations	2001 Target
Total Recordable Injury Rate (per million hours worked)	13.6	8.3	8.5
Lost Workday Injury Rate (per million hours worked)	1.70	0.85	1.05

Lost Workday Injuries – 2001	Incident type	Injury type
Western Australia	different-level fall (1)* same-level fall (1) struck by (3) contact with caustic soda (5) contact with solid objects (2)	fracture (1) laceration (1) bruise (3) burn (5) sprain/strain (1) dislocation (1)
Victoria	over-exertion (1) caught between (2) different fall level (2)	fracture (1) laceration (2) sprain/strain (2)
Alcoa KAAL	over exertion (2) different fall level (1)	sprain/strain (3)



*NUMBERS IN BRACKETS REPRESENT THE NUMBER OF INCIDENT AND INJURY TYPES.

FIGURE M LOST WORK DAY FREQUENCY RATE



TARGET > Achieve a 40% reduction in the magnitude of exposures to potentially harmful chemical agents (from a 1999 baseline).



Chemical Exposure

Risks identified  100%
Risks eliminated  12%

1999-2001 12% reduction in the magnitude of chemical hazards exceeding Alcoa standards.

TARGET > Achieve a 40% reduction in the magnitude of exposures to potentially excessive noise (from a 1999 baseline).



Noise Exposure

Risks identified  100%
Risks eliminated  30%

1999-2001 30% reduction in the magnitude of the top 10 noise sources.

TARGET > Achieve a 50% reduction in top 10 ergonomic risks at each location by 2003.

Top 10 Ergonomic Risks

Risks identified  100%
Risks eliminated  19%

Ergonomic – a major push to reduce injuries

Ergonomic issues remain our high priority. Strains/sprains and repeated trauma injuries account for nearly 51% of lost workday cases, 53% of actual days lost, 31% of total recordable injuries and 26% of all injuries to Alcoa employees globally.

Injuries of this nature can be significantly reduced by taking account of ergonomic issues at the design stage. The physical risk factors for such injuries include: excessive or sustained forces, repetition or continuous static tasks, awkward postures, and vibration.

For Alcoa, ergonomic design is a very important tool in combating workplace injuries. During 2001, an Alcoa Western Australian operations ergonomics summit was held for more than 200 employees. The summit focused on broadening employee understanding of how the Alcoa Business System could be used to lock in place the workplace changes required to overcome ergonomic problems.

ABS teams and systems provide a unique opportunity to greatly improve work practices through better job and equipment design. Recognising that people have limitations, and that these limitations vary among employees, is critical.

The top 10 ergonomic risk issues at each location have been identified and plans implemented with a view to achieving 50% reduction in these risks by 2003. Strategic planning over the coming years will endeavour to ensure that technology transfer between locations and other businesses is strengthened.

Alcoa: taking the safety message to schools

Developed by employees at Alcoa's Pinjarra refinery, the Alcoa Schools Safety Initiative is based on the belief that the safety experiences and knowledge of our employees is valuable to the wider community, particularly young people.

The program provides fun and interactive safety lessons that fit directly with the primary school health and physical education curriculum. Improvements were made after teacher assessment of trials in three schools in the Peel region south of Perth. This safety initiative is now being deployed to other schools in the Peel and Fremantle education districts with full support from district education offices.

Two Alcoa employees visit each primary school and run hour-long safety-sessions in classrooms. Lessons vary depending on the age of the children. Children in year one and two enjoy trying on safety equipment such as helmets, boots, gloves, earmuffs and overalls. Year three and four students role-play safe road behaviour, while year five and six focus on spotting hazards. Year seven students look at how safety depends on behaviour.

These sessions, complete with worksheets, participation certificates, posters and feedback forms, are detailed in a resource file for the school. It includes step-by-step lessons to run before, and after the Alcoa visit, providing a mini safety program for the teacher, rather than a 'one-off' lesson.

A key safety message, running across all year levels, is 'Just Take Five' which encourages children to 'take five' seconds, minutes or even hours to think about the safety consequences of what they are about to do.

The Alcoa Schools Safety Initiative provides educational support to schools, in a real life context, from an industry where safety is paramount. It gives us an opportunity to build and strengthen partnerships with schools by promoting 'off-the-job' safety with employees' children and their classmates.

"As much as anything it's hands-on learning and practical situations which kids actually attach some meaning too. It's a great way of bringing learning from outside the school environment into schools."

MERRILYN JONES
Principal of North Dandalup Primary School.

"The quality, presentation and instruction were excellent. The teacher's resource file with accompanying lessons was extremely relevant to the children. The presentation of the file was very professional. The children really enjoyed the lessons and feedback from our staff was very positive."

KEVIN CLARKE
Carcoola (North Pinjarra) Primary School Principal.

social

Diversity in Alcoa

Alcoa has a positive workplace culture with "family friendly" policies to encourage the retention of our employees. In our recruiting strategy we work with education providers to encourage females to consider non-traditional careers in industry.

The 1999 Diversity Survey findings on key drivers relating to job satisfaction; employee commitment, discretionary effort and intention to leave, clearly indicated the need for change in the workplace to attract and retain employees. Since then, trained contact officers have been appointed at each site to make sure that every Alcoa employee has easy access to equal employment and anti-harassment advice.

Programs such as 'Future Women in Industry', set up at each of our three Western Australian refineries, encourages young women into non-traditional employment roles, and a women's network has been established to provide Western Australian management with advice on workplace issues while assisting in the development of a better workplace for all employees.

Today, Alcoa actively "head hunts" a diverse range of potential employees for each job, rather than simply accepting applications as they are received. Alcoa today believes that being the best company in the world means attracting and retaining the best people for the job, and that all employees must be treated as individuals with particular needs and values.

Within Alcoa World Alumina Australia during 2001, the percentage of women in senior executive ranks was 10.4%, with 12.5% in senior & middle management. At Alcoa Kaal, senior executive ranks were at 15% with senior & middle management around 27%.

Best work and family company in Australia

Alcoa received the Gold Award for the highest overall performance in the 2001 Australian Chamber of Commerce and Industry National Work and Family Awards for 2001. The award was presented to then President and General Manager of Alcoa World Alumina Australia, Michael Baltzell, in September.

"Against a backdrop of global competition, and in a tough, male-dominated industry Alcoa has successfully implemented a strong and dramatic cultural change company wide. Internal commitment is matched with a focus on promoting the value of work and family balance to other corporate leaders. Employees were unanimous in stating that Alcoa's policies had altered their view of the company in a direct and positive way.

They felt able to raise issues with team leaders or union representatives, and were confident that solutions would be found. Alcoa demonstrated an unequivocal commitment to the work/life balance of their employees with positive outcomes for employees and the business."

GOLD AWARD JUDGES' comments.

Alcoa's 1995 Work and Family Policy recognised that each Alcoa work location had specific issues requiring a flexible response. Since that time, Alcoa has implemented the policy at all work levels through Work and Family Teams, made up of a cross section of employees.

Other initiatives include:

- Flexible work options including part-time, job-share and work from home.
- Flexible start and finish times.
- Paid maternity, paternity and adoption leave.
- Remote on-site childcare facilities.
- Your Work and Your Family policy guide.
- Assistance with identifying dependent care facilities.
- Emergency day care places.

Alcoa sponsors and co-ordinates the Mandurah Family Fun Day in Western Australia, undertaken as part of its commitment to community leadership. This regional Family Week initiative has evolved into a leading event with meaningful and tangible outcomes for all participants and provides information on building successful family relationships, better communication and self-esteem. The theme for 2001 was 'Time to Talk for Families' and more than 9,000 people attended, nearly twice as many as the previous year.

Landcare Makes a Difference

Alcoa's Landcare Project has made a marked difference to environments in communities across Australia, and has helped raise the profile of land degradation in both rural and urban Australia.

The Alcoa Landcare Project began in 1989 and became one of the driving forces for accelerating the repair of degraded land, the conservation of biodiversity and the protection of waterways. Concentrating initially in the Avon River catchment area east of Perth in Western Australia, the program spread to Victoria in 1991.

Since 1989, the farmers involved in the Avon Landcare Project have achieved the following:

	Hectares
Total land treated	11,787
Creek banks revegetated	804
Alley farming systems planted	828
Protected and retained bushland	3,765
	Seedlings
Trees and shrubs planted	2,175,413
Saltbush planted	152,958
	Bores
Peizometres installed	830
	Kilometres
Wind breaks/shelterbelts planted	367
Fencing erected	1,464
Deep drainage earthworks constructed	212
Surface drainage and gradebanks constructed	87

Alcoa's support for land care in the Avon River catchment area has had a ripple effect throughout government agencies. Collectively, Alcoa's Landcare programs have influenced land care research and development directions, demonstrated and extended in the wheatbelt a model for community action in salinity management and formed the basis for the way land care education is taught in WA schools.

The "cross farm boundaries" approach, a process that links individual farm impacts to total catchment activity, was pioneered by the Alcoa sponsored catchment groups and is now the model for the "Focus Catchment" program, a key component of Western Australia's State Salinity Action Plan.

The Alcoa Landcare Project has extended its involvement through to urban areas, having launched the "Swan Canning Urban Landcare Program" in 1998. This five year, \$1.25 million commitment, is helping conserve land and water resources across the Swan and Canning Rivers in Perth's metropolitan catchment areas. Money is directed to urban land care groups that are working with government agencies to revegetate the river catchments.

In Victoria, Alcoa has been the largest private sector investor in Landcare over the past 11 years in the state. The Woody Yaloak Catchment Project has set a benchmark for community catchment management and provided a model for similar projects in the State.

Alcoa has formed a number of partnerships in Victoria with the Victorian Farmers Federation, State agencies, including Parks Victoria's Serendip Sanctuary, Conservation Volunteers Australia and Greening Australia Victoria (GAVic).

Our GAVic partnership has seen the Alcoa Revegetation Project provide a large fleet of equipment used by farmers and Landcare groups and to date, this fleet has helped plant over nine million trees.

GAVic and Alcoa have also partnered in a range of projects including the Alcoa Portland Seedbank which collects seeds from indigenous plants for use in revegetation projects in the surrounding area, providing the right seed for the right sites.

The partnership with the Victorian Farmers Federation, in conjunction with Department of Natural Resources and Environment and the Victorian Catchment Management Council, delivers "Victorian Landcare and Catchment Management", a magazine that provides benchmark information across boundaries

"Alcoa of Australia's \$15 million commitment to the Landcare movement has successfully demonstrated the benefits of corporate support for cooperative community action in combating land degradation.

I congratulate the company on its Landcare Project, a commitment to, and a model for relationship building with the community to achieve win-win results for all participants."

BRIAN SCARSBRICK
Chief Executive Landcare Australia Limited

Stakeholders consulted

During 2001, Alcoa in Australia undertook a comprehensive survey of its Australian stakeholders to help understand the issues that impact and sought to understand how Alcoa can best communicate with our stakeholders on community issues that matter to all of us.

The survey was sent to 1,890 stakeholders throughout Australia – 390 replied. The survey was also put before more than 200 employees in our operations in Sydney, Geelong, and the Peel region south of Perth in Western Australia.

Respondents were asked to rate issues based on priority to the community over the next three years. Issues that rated were:

- Balancing economic growth with environmental protection.
- Ensuring the protection of clean air and water.
- Improving economic opportunity for the community.

Respondents were asked to rate the role Alcoa should play in addressing important community and environmental issues. Responses listed priorities which included:

- Ensuring the effective rehabilitation of mined land.
- Conserving energy.
- Reducing greenhouse emissions.

Respondents also felt that Alcoa should be:

- Supporting improvements in the quality of education.
- Developing opportunities for youth.
- Improving economic opportunity for the community.

Community Consultative Networks

Alcoa has established Community Consultative Networks (CCNs) at most of its sites in Australia. These CCNs allow Alcoa to inform the community of important issues and events which are impacting on the business and potentially the community. It also provides a forum for the community to raise issues of interest or concern related to Alcoa.

Through regular discussions, CCNs ensure that Alcoa and the community are responsive to each other's needs and expectations. CCN members' are from local communities and meet with location management every four to six weeks.

Talking to communities, seeking input into plans, sharing environmental performance – good and bad – and understanding communities' needs are critical to keeping the licence to operate provided to us by communities.

During 2001, the following initiatives were in place:

- CCNs met regularly at our Kwinana, Pinjarra and Wagerup refineries in Western Australia, Alcoa Kaal's Yennora plant in Sydney and at the Anglesea Power Station in Victoria.
- Annual neighbour days, encouraging near neighbours to tour sites, were held at Alcoa Kaal's Yennora (NSW), Alcoa's Anglesea site in Victoria and in WA at Alcoa World Alumina Australia's Kwinana, Pinjarra and mining group sites.
- There were numerous visits to neighbours by Wagerup refinery personnel during 2001 in response to the issues at that refinery.
- Annual open days for the wider community were held at the Wagerup and Kwinana refineries and the mining group's Huntly and Willowdale mines.
- Monthly site newsletters were available to neighbours at Alcoa Kaal's Point Henry and Yennora sites, as well as to the neighbours of operating sites in Victoria.
- Special CCN newsletters/updates were distributed to communities surrounding the Wagerup, Pinjarra, Kwinana and Yennora sites.
- A process of written communication to community members was established at the Wagerup refinery to help in the understanding of issues at that refinery.
- Annual local government visits were organised at Pinjarra, Kwinana, WA mining sites, Portland and Point Henry smelters. Wagerup undertook three monthly or as needed briefings to their local governments during 2001.
- The WA Mining Management Planning Liaison Group has two meetings a year with key government departments to discuss and sign-off mining plans.

- Public tours were conducted weekly at the Pinjarra refinery and Huntly mine and three times a week at the Portland smelter. Over 1,500 people took the Pinjarra/Huntly tours during 2001 and 4,572 at Portland. Some 4,700 students from an average of 85 schools also toured through Pinjarra and Huntly.

Education and training

Alcoa is committed to the concept of nationally accredited training opportunities for all of its current and future employees. For many years the company has been heavily involved in apprenticeship training in the mechanical and electrical/instrument areas.

Since Alcoa started operations in Western Australia in 1963, we have recruited, trained and graduated almost 1000 apprentices. We have trained 24 young people as apprentices every year for the past 39 years.

Alcoa has 87 apprentices at various stages of their training. Alcoa has also pioneered the concept of school-based traineeships, we currently support around 50 young people in the areas of clerical/administration, engineering, horticulture, land care, open cut mining, and as powerhouse controllers. Annually, another 100 secondary students are given the opportunity of working at Alcoa locations in structured workplace learning or work experience.

Alcoa believes strongly in learning as an ongoing commitment by its most valuable of resources – people. Through Alcoa's Education Tuition Aid program employees have access to support for achieving further qualifications. Employees can have up to 85% of course fees refunded by the company and the cost of learning materials is heavily subsidised. Every year Alcoa World Alumina Australia's operations support many of its employees in this way. Employees have attained tertiary qualifications as well as certificate and diploma level accreditation across a number of disciplines including commercial, health and safety, environmental and management.

Alcoa's Point Henry site is the major sponsor of the Geelong Regional Vocational Education Council (GRVEC). GRVEC supports the development of partnerships between businesses, schools and the community through organising work placements, supporting quality off-the-job and on-the-job training, and liaising with and supporting employers. In addition to financial support, and providing work placements for students, a member of Alcoa Point Henry's lead team are members of the GRVEC management committee providing strategic guidance and support. Alcoa uses GRVEC for advertising and short listing of apprentice vacancies.

Other highlights:

- In June 2000 the Kwinana Industries Council's Excellence in Education Compact, of which Alcoa's Kwinana Refinery is a driving force, won the Millennium Global Best Award for business and educational partnerships that are 'making a difference'.
- Winner of Large Employer of the Year at 2001 State Training Awards.

United Nations Association of Australia's World Environment Day Awards

Alcoa supported the Community / Individual awards, recognising environmental excellence for community groups and for an individual Victorian contributing to their community.

Alcoa + CSIRO = CREST *CREativity in Science & Education*

During 2001 Alcoa World Alumina Australia gave \$50,000 to boost creative and innovative student science through a new Australian-wide partnership with CSIRO Education.

In May, WA's Minister for Education, the Hon. Alan Carpenter launched a partnership between Alcoa and CSIRO Education's CREST program. CREST is a program that encourages and supports Australian primary and secondary students to experience the excitement of undertaking their own innovative experimental science or technology project. It raises awareness among the students of the vital role of scientific and technological research to our community.

"Alcoa's support will allow us to increase the numbers of students and teachers involved and raise the profile of the exciting work that students undertake. It also means we can encourage more young scientists who are keen to take up science careers and use it for Australia's benefit in areas as diverse as the environment, health and business."

VICKI STAVROPOULOS
CREST Coordinator with CSIRO Education.

The partnership between Alcoa and CSIRO Education, also includes support for *Scientrific* – a popular science magazine for students aged from seven years.

Community framework

Alcoa in Australia joined the global Alcoa community framework initiative in 2001 – the global "Neighbours" program – a program under which company sites hold at least five significant annual community events. The events embrace consultations, media visits, open days, politicians' briefings, local government consultations and education programs. Many people were involved at each of the three refineries, two smelters, power station and the mining operations.

"Alcoa's operating locations are part of the social fabric in the communities where we have a presence. Our neighbours rely on us and we rely on them, knowing that it can not expect to grow and prosper without the total support of our plant communities."

Over the years, where we have built strong relationships with our local communities we have learned that it is much easier to create opportunity and solve problems with friends than it is with strangers. With this in mind we have launched the Alcoa

Community Framework to reinforce a consistent level of community citizenship wherever we operate. Together, we're certain that we can dare to dream of progress that we could not achieve alone."

ALAIN BELDA
Alcoa Chairman and CEO.

Alcoa and Fremantle Arts Centre 'In the Community'

Hundreds of people from the communities around Alcoa's Western Australian mining and refining operations took part in a community project entitled "Celebrating our Volunteers" for the 2001 Alcoa / Fremantle Arts Centre's In the Community project.

Linking into the International Year of Volunteers and the national Centenary of Federation "Peoplescape" project in Canberra, the project allowed communities to recognise the commitment and dedication of the volunteers who provide essential services to local communities. The exhibition included more than 100 cardboard figurines which had been painted interpretively by community members. The project was officially launched by the Hon. Sheila McHale MLA, Minister for Culture and the Arts and Community Development in a colourful display at the Fremantle Arts Centre in November 2001.

Alcoa Foundation & ACTION

During 2001 Alcoa was able to boost our commitment to our communities by introducing the Alcoa Foundation Community Grantmaking program into Australia.

Support was committed to two major Australian community projects. The Foundation provided support to United Way (WA) for its 'Invest In Hope' project that developed as a response to a comprehensive community needs analysis carried out in Western Australia.

At Kalgoorlie in Western Australia, an initiative to build a Mining Hall of Fame to provide an industry focus for education and public awareness, will feature the Alcoa Foundation Environmental Gallery reflecting essential support from the Foundation.

One exciting funding program under the Alcoa Foundation is ACTION (Alcoans Coming Together in Our Neighbourhoods). ACTION is a program which recognises the collective efforts of Alcoa employees in communities where they live and work. The Alcoa Foundation rewards initiatives where 10 or more Alcoa employees choose to volunteer their time working together on a special community project. The launch of ACTION in 2001 involved employees from all Victorian locations. The successful projects included employees volunteering from Alcoa's Point Henry and Anglesea facilities on an environmental restoration project at Barwon Heads with Conservation Volunteers Australia. They assisted the Geelong Performing Arts Centre at the Alcoa 2001 Poppykettle Festival and assisted the Salvation Army Christmas appeal. A working bee at Nelson Park and a gazebo at the Lions Retirement Village were other successful projects with clear community benefits.

In Portland, employees' provided assistance to the YMCA and enabled local at-risk youth to participate in a personal development and leadership (Future Leaders Program). Alcoa volunteers participated in a working bee to enhance and upgrade public facilities at the popular Lions Fauna Park and worked with the Apex Club to develop a Tourist Bicycle Route, promoting healthy lifestyles and one of the area's tourist attractions.

The ACTION program has since been widened to include all Alcoa operating locations.

Alcoa 'Coach in Residence' – inaugural conference

For more than 20 years, the Alcoa Coach in Residence program has brought some of the world's best coaches to Western Australia – supporting the development of sport in an area of Australia that was initially seen to be disadvantaged because of its isolation. More than 55 different sports – from cricket to croquet – have benefited from the coaching expertise of over 230 individual coaches who have visited Western Australia through the Alcoa Coach in Residence program and shared their experience with athletes at all levels.

This program is widely regarded as the most successful long-running community sporting sponsorship in Australia. In October 2001 the Alcoa Coach in Residence program conducted the inaugural State Coaching Conference, with Alcoa sponsorship. This Alcoa/ Ministry of Sport and Recreation partnership is a new initiative for the program and the state. The Minister for Sport Hon. Alan Carpenter MLA joined more than 100 community coaches and coaching experts, motivators and professionals in a landmark conference.

Data Summary 2001

	Units	Bauxite Mining	Alumina Refining	Aluminium Smelting	Anglesea Power
Inputs					
electricity – imported (1)	MWh			7,173,118	-
natural gas	TJ		85,500	940	
diesel and fuel oil	kl	25,800	4,580	894	2,400
coal – as mined	kt				930
bauxite – as mined	kt		26,000		
other raw materials (2)	kt		865	228	1
water – fresh (3)	MI	844	11,100	755	22
water – poorer quality	MI		9,400		3,900
land cleared for bauxite	ha	548			
Product Outputs					
smelter grade alumina	Mt		7.77		
alumina chemicals	Mt		0.25		
aluminium	Mt			0.53	
electricity – exported (4)	MWh		173,000		1,066,448
land rehabilitated	ha	937			
Waste Outputs					
CO ₂ – imported power	kt			10,409	
CO ₂ equiv. – internal (5)	kt	74	5,360	1,087	1,326
bauxite residue stored (6)	kt		14,500		
bauxite residue used	t		1,500		
fly ash stored	t				21,000
spent pot lining (7)	t			8,900	
recycled waste (8)	t	1,066	3,600	31,012	1,173
landfilled waste (9)	t	17,344	42,400	891	1,125
NPI Air Emissions (10)					
acetone	kg		21,000		
arsenic and compounds	kg	64	220		11
benzene	kg		19,000		
cadmium and compounds	kg	1	42		0
carbon monoxide	kg	350,000	3,000,000	61,500,000	140,000
chromium (vi) compounds	kg	2	5		0
cobalt and compounds	kg	5	14		
fluoride compounds	kg	1,700	1,500	372,000	130
lead and compounds	kg	80	190		17
mercury and compounds	kg		1,000		40
oxides of nitrogen	kg	850,000	4,900,000	270,000	3,400,000
particulate matter (PM10)	kg	2,000,000	1,800,000		900,000
polycyclic aromatics	kg		6,500	8,300	10
sulphur dioxide	kg	22,000	4,600	10,400,000	37,000,000
sulphuric acid	kg		1		

NOTES

1. PURCHASED ELECTRICITY SOURCED EXTERNALLY. EXCLUDES ELECTRICITY TRANSFERRED BETWEEN ALCOA FACILITIES FOR INTERNAL USE.
2. OTHER MAJOR RAW MATERIALS – CAUSTIC SODA AND LIME FOR REFINERIES AND COKE AND PITCH FOR SMELTERS.
3. FRESH WATER IS DEFINED HERE AS WATER THAT WOULD BE SUITABLE FOR HUMAN CONSUMPTION AFTER PRIMARY TREATMENT.
4. INCLUDES ELECTRICITY EXPORTED FROM THE REFINERIES TO EXTERNAL USERS AND FROM ANGLESEA POWER STATION TO POINT HENRY SMELTER.
5. INCLUDES PFC EMISSIONS FROM SMELTERS, USE OF FUELS (INCLUDING FUEL USED BY CONTRACTORS OPERATING HEAVY EQUIPMENT ON SITE), IMPORTED ELECTRICITY AND EXPLOSIVES. DOES NOT INCLUDE NET EMISSIONS FROM VEGETATION CLEARING, SOIL DISTURBANCE AND MINE REHABILITATION, NOR EMISSIONS ATTRIBUTABLE TO ELECTRICITY EXPORTED FROM THE REFINERIES TO EXTERNAL USERS.
6. BAUXITE RESIDUE QUANTITY EXPRESSED AS DRY TONNES.
7. SPENT POT LINING INCLUDES POT LINING TREATED DURING DEVELOPMENTAL TRIALS OF PORTLAND SMELTER'S SPL TREATMENT FACILITY.
8. RECYCLED WASTE INCLUDES MATERIALS RE-USED ON OR OFF SITE.
9. INCLUDES ALL NON-RECYCLED GENERAL AND PROCESS WASTES OTHER THAN THOSE IDENTIFIED SEPARATELY.
10. NPI EMISSION ESTIMATES ARE FOR 2000/2001. AS SOME OF THESE ESTIMATES HAVE LARGE ERROR BOUNDS, REPORTED DATA ARE ROUNDED TO 2 SIGNIFICANT FIGURES. AMOUNTS LESS THAN ONE KILOGRAM NOT SHOWN. FURTHER INFORMATION IS AVAILABLE AT WWW.ALUMINIUM.ORG.AU.

Alcoa of Australia Limited and Kaal Australia Pty, Limited lodge their annual financial returns with the Australian Securities and Investments Commission where they are on the public record.

Alcoa of Australia's consolidated accounts include the following subsidiaries:

Alcoa of Australia (Asia) Limited
Coala Insurance Company Limited
A.F.P. Pty Ltd
Hedges Gold Pty Ltd
ACAP Australia Pty Ltd
Portland Smelter Services Pty Ltd
Eastern Aluminium Pty Ltd
Eastern Aluminium (Portland) Pty Ltd

Copies of Alcoa of Australia's consolidated accounts can be obtained by telephoning (08) 9316 5290 or by e-mailing to pr@alcoa.com.au.