



DIVISION OF  
CORPORATION FINANCE

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549-3010

February 3, 2009

Scott E. Seewald  
Counsel  
Alcoa Inc.  
Alcoa Corporate Center  
201 Isabella St at 7th St Bridge  
Pittsburgh, PA 15212-5858

Re: Alcoa Inc.  
Incoming letter dated December 18, 2008

Dear Mr. Seewald:

This is in response to your letter dated December 18, 2008 concerning the shareholder proposal submitted to Alcoa by the Free Enterprise Action Fund. We also have received a letter on the proponent's behalf dated December 23, 2008. Our response is attached to the enclosed photocopy of your correspondence. By doing this, we avoid having to recite or summarize the facts set forth in the correspondence. Copies of all of the correspondence also will be provided to the proponent.

In connection with this matter, your attention is directed to the enclosure, which sets forth a brief discussion of the Division's informal procedures regarding shareholder proposals.

Sincerely,

Heather L. Maples  
Senior Special Counsel

Enclosures

cc: Steven J. Milloy  
Managing Partner & General Counsel  
Action Fund Management, LLC  
12309 Briarbush Lane  
Potomac, MD 20854

February 3, 2009

**Response of the Office of Chief Counsel**  
**Division of Corporation Finance**

Re: Alcoa Inc.  
Incoming letter dated December 18, 2008

The proposal requests that the board prepare a global warming report.

There appears to be some basis for your view that Alcoa may exclude the proposal under rule 14a-8(i)(10). Accordingly, we will not recommend enforcement action to the Commission if Alcoa omits the proposal from its proxy materials in reliance on rule 14a-8(i)(10).

Sincerely,

Damon Colbert  
Attorney-Adviser

**DIVISION OF CORPORATION FINANCE  
INFORMAL PROCEDURES REGARDING SHAREHOLDER PROPOSALS**

The Division of Corporation Finance believes that its responsibility with respect to matters arising under Rule 14a-8 [17 CFR 240.14a-8], as with other matters under the proxy rules, is to aid those who must comply with the rule by offering informal advice and suggestions and to determine, initially, whether or not it may be appropriate in a particular matter to recommend enforcement action to the Commission. In connection with a shareholder proposal under Rule 14a-8, the Division's staff considers the information furnished to it by the Company in support of its intention to exclude the proposals from the Company's proxy materials, as well as any information furnished by the proponent or the proponent's representative.

Although Rule 14a-8(k) does not require any communications from shareholders to the Commission's staff, the staff will always consider information concerning alleged violations of the statutes administered by the Commission, including argument as to whether or not activities proposed to be taken would be violative of the statute or rule involved. The receipt by the staff of such information, however, should not be construed as changing the staff's informal procedures and proxy review into a formal or adversary procedure.

It is important to note that the staff's and Commission's no-action responses to Rule 14a-8(j) submissions reflect only informal views. The determinations reached in these no-action letters do not and cannot adjudicate the merits of a company's position with respect to the proposal. Only a court such as a U.S. District Court can decide whether a company is obligated to include shareholder proposals in its proxy materials. Accordingly a discretionary determination not to recommend or take Commission enforcement action, does not preclude a proponent, or any shareholder of a company, from pursuing any rights he or she may have against the company in court, should the management omit the proposal from the company's proxy material.

action fund  
management, LLC

12309 briarbush lane  
potomac, md 20854  
T 301/258 2852  
F 301/330 3440

December 23, 2008

VIA OVERNIGHT DELIVERY

Office of the Chief Counsel  
Division of Corporation Finance  
U.S. Securities and Exchange Commission  
100 F Street, N.W.  
Washington, DC 20549

Re: Shareowner Proposal of the Free Enterprise Action Fund to Alcoa under  
Exchange Act Rule 14a-8

Dear Ladies and Gentlemen:

This letter is submitted on behalf of the Free Enterprise Action Fund ("FEAOX") in response to a December 18, 2008 request from Alcoa to the Division of Corporation Finance ("Staff") for a no-action letter concerning the above-captioned shareowner proposal.

Action Fund Management, LLC is the investment advisor to the FEAOX and is authorized to act on its behalf in this matter.

We believe that Alcoa's request is without merit and that there is no legal or factual basis for Alcoa to exclude the Proposal from its 2008 Proxy Materials.

Finally, we request that Mr. Thomas J. Kim, chief counsel of the Division of Corporation Finance and a former attorney for the General Electric Company, formally recuse himself from any role in this matter.

**I. The Proposal qualifies for resubmission to shareholders.**

The proposal was included for the first time in Alcoa's 2008 proxy statement and received more than 5 percent shareholder support, according to Alcoa's Form 10Q filed on July 24, 2008 for the period ending June 30, 2008. The Proposal received more than enough shareholder support to be included in Alcoa's 2009 proxy statement, according to Rule 14a-8.

**II. Alcoa expressly admits it has not implemented the Proposal.**

Alcoa expressly admits in its request to the Staff (*see* p.4), that

*Alcoa acknowledges that its Climate Change Report, Sustainability Report and other global warming materials do not explicitly discuss the impact of Alcoa's actions on "changes in mean global temperature and any undesirable climatic and weather-related events and disasters avoided." [Emphasis added]*

Since this "impact" is the exclusive disclosure sought by the Proposal, Alcoa has not substantially implemented the proposal.

Alcoa claims that, "Current scientific knowledge does not allow a particular company to parse out its specific impact on mean global temperature or weather-related events."

This is not true.

It is a relatively straightforward calculation using publicly-available formulas to estimate the impact on average global temperature of any level of greenhouse gas emissions. Even if Alcoa cannot do this simple calculation or cannot assess its impact on weather-related events, all the company need do to fulfill the report is to make a statement to the effect that, "Alcoa has no idea whether its actions are having any beneficial impact on global climate." Such a disclosure would provide shareholders with meaningful information by which they may evaluate corporate actions.

As is, Alcoa wants to be permitted to tout its global warming actions to shareholders without ever having to show that those actions actually accomplished anything in terms of the environment.

### **III. Thomas Kim should recuse himself from this matter.**

We request that Thomas Kim, chief counsel of the Staff, recuse himself from this matter because he is a former attorney for the General Electric Company ("GE") and he may be biased against the FEAOX because of its shareholder activities.

While Mr. Kim was employed by GE:

- The Staff three-times refused to grant GE no-action requests on global warming shareholder proposals filed by the FEAOX;
- A member of Gibson, Dunn & Crutcher, GE's law firm, was sanctioned by his employer for sending an obscene e-mail to the FEAOX related to a shareholder proposal filed with GE. See <http://blogs.wsj.com/law/2007/02/12/law-blog-email-of-the-day-by-gibson-dunns-larry-simms/>.
- GE joined the U.S. Climate Action Partnership, many members of which have received shareholder proposals from the FEAOX.

### **V. Conclusion**

Based upon the forgoing analysis, we respectfully request that the Staff reject Alcoa's request for a "no-action" letter concerning the Proposal. If the Staff does not concur with

our position, we would appreciate the opportunity to confer with the Staff concerning these matters prior to the issuance of its response. Also, we request to be party to any and all communications between the Staff and Alcoa and its representatives concerning the Proposal.

A copy of this correspondence has been timely provided to Alcoa and its counsel. In the interest of a fair and balanced process, we request that the Staff notify the undersigned if it receives any correspondence on the Proposal from Alcoa or other persons, unless that correspondence has specifically confirmed to the Staff that the Proponent or the undersigned have timely been provided with a copy of the correspondence. If we can provide additional correspondence to address any questions that the Staff may have with respect to this correspondence or Alcoa's no-action request, please do not hesitate to call me at 301-258-2852.

Sincerely,

A handwritten signature in black ink, appearing to read "Steven J. Milloy", with a long horizontal flourish extending to the right.

Steven J. Milloy  
Managing Partner & General Counsel

cc: Scott E. Seewald, Counsel, Alcoa



RECEIVED

2008 DEC 19 PM 5:16

OFFICE OF CHIEF COUNSEL  
CORPORATION FINANCE

**Alcoa**

Alcoa Corporate Center  
201 Isabella St at 7th St Bridge  
Pittsburgh, PA 15212-5858 USA  
Tel: 1 412 553 4974  
Fax: 1 412 553 4180

December 18, 2008

Office of Chief Counsel  
Division of Corporation Finance  
Securities and Exchange Commission  
100 F Street, N.E.  
Washington, D.C. 20549

**Re: Alcoa Inc.  
Securities Exchange Act of 1934 – Rule 14a-8  
Shareholder Proposal of the Free Enterprise Action Fund**

Dear Ladies and Gentlemen:

This letter is to notify the Securities and Exchange Commission (the "Commission") that Alcoa Inc., a Pennsylvania corporation ("Alcoa"), intends to exclude from its proxy statement and form of proxy for its 2009 annual meeting of shareholders (collectively, the "2009 Proxy Materials") a shareholder proposal and supporting statement (together, the "Proposal") received from the Free Enterprise Action Fund (the "Proponent"), for the reason described below. A copy of the Proposal is attached hereto as Exhibit A.

Alcoa respectfully requests that the Staff of the Division of Corporation Finance (the "Staff") confirm that it will not recommend any enforcement action against Alcoa if it omits the Proposal from the 2009 Proxy Materials. In accordance with Rule 14a-8(j), under the Securities Exchange Act of 1934, as amended ("Exchange Act"), enclosed are six copies of this letter and its attachments. As notice of Alcoa's intention to exclude the Proposal from the 2009 Proxy Materials, a copy of this letter and its attachments is also being mailed to the Proponent, in care of its designated representative, Steven J. Milloy of Action Fund Management. This letter is being filed with the Commission no later than eighty (80) calendar days before Alcoa intends to file its definitive 2009 Proxy Materials with the Commission.

#### **BASIS FOR EXCLUSION**

Alcoa believes that the Proposal may be excluded from the 2009 Proxy Materials in reliance on Rule 14a-8(i)(10) because Alcoa has already substantially implemented the Proposal.

#### **THE PROPOSAL**

The Proposal requests that Alcoa's Board of Directors prepare a global warming report. Specifically, the Proposal states:

"Resolved. The shareholders request that the Board of Directors prepare by October 2009, at reasonable expense and omitting proprietary information, a Global Warming Report. The report may describe and discuss how action taken by Alcoa to reduce its impact on global climate change may:

1. Have affected global climate to date; and may
2. Affect global climate in the foreseeable future.

The report may include discussions of Alcoa's impact on global climate in terms of any changes in mean global temperature and any undesirable climatic and weather-related events and disasters avoided."

## ANALYSIS

### **The Proposal may be Excluded under Rule 14a-8(i)(10) because Alcoa has already Substantially Implemented the Proposal.**

Rule 14a-8(i)(10) permits a company to exclude a shareholder proposal from its proxy materials if the company has already substantially implemented the proposal. For the reasons discussed below, Alcoa requests that the Staff concur that the Proposal may be omitted pursuant to Rule 14a-8(i)(10) because Alcoa has already published reports and other materials on global warming that substantially implement the Proposal.

### **Background**

Alcoa has a long history of assessing and reporting on the company's impact on global warming and other environmental issues. In 1998, Alcoa established a Climate Change Strategy Team that developed and promoted the company's position on climate change and publishes a report on this issue (the "Climate Change Report"). The Climate Change Report, entitled "Greenhouse Gases and Climate Change: What we believe," is available on Alcoa's website at the following web address:

[www.alcoa.com/global/en/environment/climate\\_change/climate\\_overview.asp](http://www.alcoa.com/global/en/environment/climate_change/climate_overview.asp), and has been attached hereto as Exhibit B. Among other things, the Climate Change Report cites research indicating that aluminum produced for the transportation industry will be greenhouse gas ("GHG") neutral by 2025. Furthermore, the Climate Change Report cites a late 2007 study indicating a 14 percent reduction in total direct GHG emissions from the production processes of primary aluminum between 2000 and 2005. The Climate Change Report also discusses Alcoa's use of renewable energy sources, such as hydroelectric power, to reduce GHG emissions. Finally, the Climate Change Report discusses Alcoa's 2020 Framework for Sustainability that includes specific emissions reduction targets, such as achieving a 25% reduction in worldwide direct GHG emissions in 2010 from a base year of 1990. As the report indicates, Alcoa achieved this goal seven years early, in 2003, and as of 2007 had reduced such emissions by 33%.

In addition, as set forth in the Climate Change Report, Alcoa participates in many organizations focused on climate change and the reduction of GHG emissions. In early 2007, Alcoa joined several other large U.S.-based corporations and four leading environmental organizations to found the U.S. Climate Action Partnership, an alliance designed to support and enact strong national legislation to achieve significant reductions of GHG emissions. Later in 2007, Alcoa became a founding reporter of the Climate Registry, agreeing to report GHG emissions individually from all of its large facilities in the United States by the year 2010. Currently, Alcoa publishes charts on its website setting forth the company's annual GHG and other emissions from 2003 through 2007, as well as emissions data from certain earlier years. This GHG and other emissions data, entitled "Emissions, Effluents & Waste – Performance Data" ("Emissions Data") is attached hereto as Exhibit C and can be accessed on Alcoa's website at: [www.alcoa.com/global/en/about\\_alcoa/sustainability/env\\_eew\\_past\\_perf.asp](http://www.alcoa.com/global/en/about_alcoa/sustainability/env_eew_past_perf.asp).

To further chronicle all of Alcoa's actions to reduce its GHG emissions and impact on global climate change, Alcoa publishes an annual Sustainability Highlights report. The most recent report, Alcoa's 2007 Sustainability Highlights report (the "Sustainability Report"), which is attached hereto as Exhibit D, and past Alcoa annual sustainability reports and regional sustainability reports can be accessed on Alcoa's website at [www.alcoa.com/global/en/about\\_alcoa/sustainability/rmp\\_overview.asp](http://www.alcoa.com/global/en/about_alcoa/sustainability/rmp_overview.asp). The Sustainability Report, among other things, describes and discusses the various actions Alcoa has taken, as well as the actions Alcoa plans to take, to

reduce its impact on global warming.<sup>1</sup> In particular, page 8 of the Sustainability Report provides that climate change is Alcoa's "key sustainability issue as a company." The company notes that Alcoa's strategies to reduce GHG emissions have resulted in reductions in GHG emissions by 33% between 1990 and 2007. Also on page 8, Alcoa describes the key elements of its climate change framework, which include the following: continuing to reduce Alcoa's GHG footprint by pursuing transformation production technology, energy efficiency, and renewable sources of power; increasing the promotion of recycling; taking a leadership position on public policy to promote GHG-reducing actions; incorporating carbon risk into business planning models; incorporating climate change into the company's new product strategy; continuing to pursue the development of GHG-free inert-anode aluminum smelting; and using biodiesel to power mobile equipment at Alcoa's plants. On pages 12 and 13 of the Sustainability Report, Alcoa notes the company's progress in percentage reductions of various emissions from 2000 through year-end 2007, as well as Alcoa's goal for percentage reductions by 2010 and 2015. Further, on page 18 of the Sustainability Report Alcoa notes that, due to the increasing concern for controlling GHG emissions, the company looks to "incorporate carbon offsetting opportunities in the revegetation and restoration work [Alcoa] perform[s]." Finally, on page 19 of the Sustainability Report, Alcoa describes its reduction in GHG emissions and provides a chart demonstrating its decrease in direct GHG emissions and other emissions between 2000 and 2007.

### Discussion

In 1976, the Commission stated in the predecessor to Rule 14a-8(i)(10) that the policy underlying the substantially implemented exclusion is "to avoid the possibility of shareholders having to consider matters which have already been favorably acted upon by management . . ." Exchange Act Release No. 12598 (July 7, 1976). Prior to 1983, exclusion of shareholder proposals under the predecessor to Rule 14a-8(i)(10) was permitted only where the proposal had been "fully effected." See Exchange Act Release No. 20091 at § II.E.6 (Aug. 16, 1983) (the "1983 Release"). In 1983, however, the Commission adopted an interpretive change to permit omission of proposals that had been "substantially implemented." See *id.* In adopting this interpretation of Rule 14a-8(i)(10), the Commission stated that "the previous formalistic application of this provision defeated its purpose." *Id.*

The Commission's 1998 amendments to the proxy rules, which (among other things) implemented the current Rule 14a-8(i)(10), reaffirmed the position that a proposal may be omitted if it has been "substantially implemented." See Amendments to Rules on Shareholder Proposals, Exchange Act Release No. 40018 at n.30 and accompanying text (May 21, 1998). Consequently, as noted in the 1983 Release, in order to be excludable under Rule 14a-8(i)(10), a shareholder proposal does not need to be "fully effected" – it need only be "substantially implemented." Applying this standard, it has been noted that "a determination that the [c]ompany has substantially implemented the proposal depends upon whether [the company's] particular policies, practices and procedures compare favorably" with those requested under the proposal, and not on the exact means of implementation. *Texaco, Inc.* (avail. Mar. 28, 1991) (emphasis added) (involving a proposal requesting the company to adopt a set of environmental guidelines which involve implementing operational and managerial programs as well as making provision for periodic assessment and review).

Thus, substantial implementation under Rule 14a-8(i)(10) permits exclusion of a shareholder proposal when a company's actions satisfactorily address the underlying concerns of the proposal and the essential objective of the proposal even when the manner by which a company implements the proposal does not correspond precisely to the actions sought by the shareholder proponent. See the 1983 Release; see also *Honeywell International Inc.* (avail. Jan. 31, 2007) (permitting exclusion of a shareholder proposal requesting that any proposed or current poison pill be subject to an immediate shareholder vote where the company's by-laws required prior shareholder approval of a poison pill with only limited exceptions); *Sun Microsystems, Inc.* (avail. Sept. 12, 2006) (same);

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<sup>1</sup> The Sustainability Report was furnished to the Commission as an exhibit to Alcoa's Form 8-K filed with the Commission on June 13, 2008. Past sustainability reports have also been furnished by Alcoa as exhibits to Forms 8-K filed with the Commission.

*Exxon Mobil Corp.* (avail. Mar. 18, 2004) (permitting exclusion of a shareholder proposal requesting that the company report on its response to regulatory, competitive and public pressure to significantly reduce carbon dioxide and other greenhouse gas emissions where the company was in the process of preparing a report providing such information). Indeed, in several recent no-action letters the Staff has permitted exclusion of a shareholder proposal requesting that the company's board prepare a global warming report, nearly identical to the proposal at issue here and submitted by the same proponent, where the company was already addressing these issues through various reports and materials published on its website. See, e.g., *Wal-Mart Stores, Inc.* (avail. Mar. 10, 2008); *Dow Chemical Company* (avail. Mar. 5, 2008); and *Johnson & Johnson* (avail. Feb. 22, 2008).

In this case, like the cases discussed immediately above, the Proponent requests that Alcoa's board prepare a "Global Warming Report," and suggests some topics the report may address, such as how Alcoa's actions may have affected global climate change to date and may affect global climate in the foreseeable future. Alcoa believes it has substantially implemented the Proposal through the global warming issues discussed on its website in Alcoa's Climate Change Report ([Exhibit B](#) hereto), Emissions Data ([Exhibit C](#) hereto), and Sustainability Report ([Exhibit D](#) hereto). This is particularly true considering the language of the Proposal, which merely suggests the global warming-related topics that may be addressed in the report.

As discussed above, Alcoa's Climate Change Report, Sustainability Report and Emissions Data provide detailed information regarding actions taken by Alcoa to reduce its impact on global climate change, the company's plans for reducing such impact in the future, and comprehensive data regarding Alcoa's reduction in emissions as a result of its actions. These published materials report on Alcoa's impact on the global climate by quantifying the company's GHG and other environmental emissions and the gradual reduction of these emissions resulting from Alcoa's increased energy efficiency, use of renewable power sources, and other strategies for reducing its GHG footprint. The published materials also set forth Alcoa's strategies for continuing to reduce its impact on the global climate in the future by further implementing its emissions-reducing strategies, such as its efforts to pursue the development of GHG-free inert-anode aluminum smelting.

Alcoa acknowledges that its Climate Change Report, Sustainability Report and other global warming materials do not explicitly discuss the impact of Alcoa's actions on "changes in mean global temperature and any undesirable climatic and weather-related events and disasters avoided," as requested by the Proposal. Notably, this request is stated in the Proposal only in suggestive terms, providing that Alcoa's report "may" include discussions on these topics. More importantly, it would not be possible for Alcoa to provide a report "at reasonable expense" that sets forth Alcoa's impact on "mean global temperature" or avoiding "weather-related events and disasters." Global warming is a complex scientific issue that is impacted by an undetermined number of factors. Current scientific knowledge does not allow a particular company to parse out its specific impact on mean global temperature or weather-related events. Any attempt to make such a determination would cost Alcoa significant resources and greatly exceed the "reasonable expense" requirement requested by the Proponent.

Alcoa believes that its view that the Climate Change Report, the Sustainability Report and the Emissions Data substantially implement the Proposal is similar to the position taken by Wal-Mart Stores, Inc. ("Wal-Mart") in its no-action letter request dated January 25, 2008. In *Wal-Mart Stores, Inc.* (avail. March 10, 2008), the Staff indicated it would not recommend action to the Commission if the company omitted, under Rule 14a-8(i)(10), a proposal requesting a global warming report that was nearly identical to the Proposal in the instant case and submitted by the same proponent. Wal-Mart, like Alcoa, argued that it had substantially implemented the proposal based on its annual sustainability report and other global warming materials available on its website. In particular, Wal-Mart noted that its sustainability report set forth the company's proposed actions to limit its GHG emissions, its plans to use renewable energy, and data containing its current annual level of emissions. Wal-Mart also relied on fact sheets available on its website that discuss its goals of limiting GHG emissions. Similarly, Alcoa's Sustainability Report, Climate Change Report and Emissions Data discuss Alcoa's proposed actions to limit its GHG emissions and the company's plans to use renewable energy sources, and include charts quantifying the amount of the company's annual emissions over the past several years. In addition, Wal-Mart, like Alcoa,

argued that current scientific knowledge would not allow it to reasonably address the Proponent's suggestion to include a discussion of the company's impact on mean global temperature and weather-related events. In sum, Alcoa believes that, like Wal-Mart, Alcoa has already substantially implemented the Proposal through the several reports and other materials available on Alcoa's website that report extensively on the company's policies and practices with respect to global warming.

### CONCLUSION

Based on the foregoing, Alcoa respectfully requests that the Staff concur that it will take no action if Alcoa excludes the Proposal from its 2009 Proxy Materials pursuant to Rule 14a-8(i)(10) because Alcoa has already substantially implemented the Proposal.

Please direct any questions or comments regarding this request to the undersigned at Alcoa Inc., 201 Isabella Street, Pittsburgh, PA 15212 (telephone 412-553-4974; fax 412-553-4180).

Thank you for your consideration.

Very truly yours,



Scott E. Seewald  
Counsel

Enclosures

cc: Mr. Steven J. Milloy (with enclosures)  
c/o Action Fund Management, LLC  
12309 Briarbush Lane  
Potomac, MD 20854

**EXHIBIT A**

[Proposal]

action fund  
management, LLC

12309 briarbush lane  
potomac, md 20854  
t 301/258 2852  
f 301/330 3440

BY FAX

November 20, 2009

Donna Dabney  
Corporate Secretary  
Alcoa  
390 Park Avenue  
New York, NY 10022-4608

Dear Ms. Dabney:

I hereby submit the enclosed shareholder proposal ("Proposal") for inclusion in the Alcoa (the "Company") proxy statement to be circulated to Company shareholders in conjunction with the next annual meeting of shareholders. The Proposal is submitted under Rule 14(a)-8 (Proposals of Security Holders) of the U.S. Securities and Exchange Commission's proxy regulations.

The Free Enterprise Action Fund ("FEAOX") is the beneficial owner of approximately 734 shares of the Company's common stock that have been held continuously for more than a year prior to this date of submission. The FEAOX intends to hold the shares through the date of the Company's next annual meeting of shareholders. The record holder's appropriate verification of the FEAOX's beneficial ownership will follow.

The FEAOX's designated representatives on this matter are Mr. Steven J. Milloy and Dr. Thomas J. Borelli, both of Action Fund Management, LLC, 12309 Briarbush Lane, Potomac, MD 20854. Action Fund Management, LLC is the investment adviser to the FEAOX. Either Mr. Milloy or Dr. Borelli will present the Proposal for consideration at the annual meeting of shareholders.

If you have any questions or wish to discuss the Proposal, please contact Mr. Milloy at 301-258-2852. Copies of correspondence or a request for a "no-action" letter should be forwarded to Mr. Milloy c/o Action Fund Management, LLC, 12309 Briarbush Lane, Potomac, MD 20854.

Sincerely,

Steven  
Milloy

Digitally signed by Steven Milloy  
DN: cn=Steven Milloy, c=US,  
email=stevenmilloy@yahoo.com  
Date: 2008.11.20 13:51:40  
+0500

Steven J. Milloy  
Managing Partner  
Investment Adviser to the FEAOX, Owner of Alcoa Common Stock

Attachment: Shareholder Proposal: Global Warming Report

## Global Warming Report

Resolved: The shareholders request that the Board of Directors prepare by October 2009, at reasonable expense and omitting proprietary information, a Global Warming Report. The report may describe and discuss how action taken by Alcoa to reduce its impact on global climate change may:

1. Have affected global climate to date; and may
2. Affect global climate in the foreseeable future.

The report may include discussions of Alcoa's impact on global climate in terms of any changes in mean global temperature and any undesirable climatic and weather-related events and disasters avoided.

### Supporting Statement:

Alcoa says on its web site that it supports action on global warming. Alcoa is a member of the U.S. Climate Action Partnership (USCAP), a group that lobbies for global warming regulation.

But scientific data show that atmospheric levels of carbon dioxide, the greenhouse gas of primary concern in global warming, do not drive global temperature. *See e.g.*, <http://youtube.com/watch?v=XDI2NVTYRXU>.

Even assuming for the sake of argument that atmospheric carbon dioxide levels affect global temperatures, the U.S. Environmental Protection Agency recently projected that worldwide regulation of manmade greenhouse gas emissions would have a trivial impact on atmospheric concentrations of carbon dioxide. *See* <http://www.epa.gov/climatechange/downloads/s1766analysispart1.pdf>.

So greenhouse gas regulation is not likely to discernibly affect global climate.

Global warming regulation is expected to harm the economy. The Congressional Budget Office, U.S. Department of Energy and prominent economists such as Alan Greenspan, Arthur Laffer and Greg Mankiw all say that cap-and-trade — a type of greenhouse gas regulation promoted by USCAP — would reduce economic growth. *See e.g.*, [http://www.junkscience.com/failure\\_to\\_disclose.pdf](http://www.junkscience.com/failure_to_disclose.pdf).

Shareholders want to know how Alcoa's actions relating to global warming may be affecting global climate.

**EXHIBIT B**

[Climate Change Report – Excerpt from Alcoa’s website entitled  
“Greenhouse Gases and Climate Change: What we believe”]



## What we believe about climate change



### We believe that it's time for industry, the public and government to work together worldwide

As a company whose core Values include a global commitment to sustainability, Alcoa supports climate change action with other corporate leaders, governments and citizens groups wherever possible. In the US, Alcoa is a founding member of the United States Climate Action Partnership as well as the Global Roundtable on Climate Change. In Brazil, Alcoa has joined the Climate Action Defense Compact, an agreement to work towards limiting and stopping global warming caused by greenhouse gases. In Australia, Alcoa is partnering with other companies to sequester CO<sub>2</sub> in bauxite residue. These and other efforts keep Alcoa at the lead of a global effort to address climate change responsibly and sustainably.



→ learn more  
→ Visit the GROCC web site



→ learn more  
→ Visit the USCAP web site



Brazilian Business Council for Sustainable Development  
→ read the Climate Action Defense Compact [PDF, 57KB]

### We believe that reducing greenhouse gases is a win-win

A key factor in reducing greenhouse emissions is energy efficiency. Because of the amount of energy required to make aluminum from ore, any increase in energy efficiency—through process improvements and through the use of recycled feedstock—can make Alcoa both greener and more competitive.

→ Read an Alcoa speech on the strategic importance of recycling



(photo: nasa)

### We believe in using renewable energy

Alcoa is also actively increasing its supply of cost-effective renewable resources and actively supports the Green Power Market Development Group, a collaboration of 13 leading corporations and the World Resources Institute dedicated to building corporate markets for green power. Our understanding of the importance of renewable energy goes back to 1917, when we began using hydroelectric power as a key source of energy for smelting operations worldwide. Today, in North America alone, our own hydro facilities generate more than 5.4 billion kilowatt hours for Alcoa operations. In early 2007, our first greenfield smelter in 20 years will go on line in Iceland, powered by sustainable hydropower. For a second project in Iceland, we are currently evaluating geothermal power. If built, this would be the world's first



geo-powered aluminum facility.

→ [Read more](#)

### **We believe in raising the bar**

Our 2020 Strategic Framework for Sustainability outlines an aggressive schedule for reducing our environmental impact across the board, even as our capacity grows to meet increasing world demand for aluminum. The 2020 Framework includes specific emissions targets, and we are ahead of schedule in meeting many of these. For example, our initial goal was to achieve a 25% reduction in worldwide direct greenhouse gas emissions from managed facilities by 2010 from a base year of 1990. We achieved this goal in 2003 and since then have further reduced emissions to 33% over 1990 levels.

→ [See the 2020 Framework](#)



### **We believe that our climate change policy is part of a bigger picture**

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

Environmental responsibility is built into our core Values. 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.

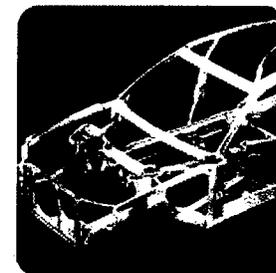
→ [Read our corporate Vision and Values statement](#)



### **We believe that our product has an important role to play**

As a light, strong, versatile metal that recycles over and over again, aluminum offers energy-saving solutions to consumers and industry that few other materials can match. Aluminum can improve fuel economy and reduce emissions in automobiles, trucks, trains, and ships. In beverage cans, it recycles directly from scrap back into can stock—something few other container materials can do. The process saves 95% of the energy used to make new can sheet.

→ [Download a technical paper on life cycle analysis \(PDF\)](#)



### **Aluminum will be greenhouse gas neutral by 2025**

In the critical transportation industry, our research in lifecycle modeling has shown that by 2025 the emissions of the entire aluminum industry can be offset by the potential emission savings from the transport sector's increased use of aluminum.

→ [Read the research report](#)

### **Direct Greenhouse Gas Emissions Reduced Significantly Despite Growth in Primary Aluminium Production, New Life Cycle Inventory Report Confirms**

London, UK (October 22, 2007) — The International Aluminium Institute reported today industry survey results showing a 14 percent reduction in total direct greenhouse gas emissions from the production processes of primary aluminium, including bauxite mining, alumina refining, anode production, aluminium smelting and casting, between 2000 and 2005, despite a 20 percent growth in primary aluminium production covered in the survey.

→ [more](#)



false

### Alcoa is a founding member of the United States Climate Action Partnership (USCAP)

Alcoa joined nine highly esteemed U.S.-based companies and four leading environmental organizations to call on the U.S. government to quickly enact strong national legislation to achieve significant reductions of greenhouse gas emissions.

Alcoa and its partners have formed an unprecedented alliance called the U.S. Climate Action Partnership (USCAP) to send a clear signal to lawmakers that legislative action is urgently needed. USCAP consists of market leaders Alcoa, BP America, Caterpillar, Duke Energy, DuPont, FPL Group, General Electric, Lehman Brothers, PG&E, and PNM Resources along with leading non-governmental organizations (NGOs) Environmental Defense, Pew Center on Global Climate Change, Natural Resources Defense Council, and World Resources Institute.

"Each year that we delay action to control emissions increases the risk of unavoidable consequences that could necessitate even steeper reductions in the future, at potentially greater economic cost and social disruption," said Alcoa Chairman and CEO Alain Belda. Belda represented Alcoa at congressional and national press briefings introducing USCAP on January 22, 2007.

#### Mandate for Action

The USCAP partners have outlined specific recommendations that form a "Call for Action". The group believes a U.S. policy framework must include mandatory approaches to reduce greenhouse gas emissions from economic sectors with the highest emissions; flexible approaches to establish a price signal for carbon that varies by economic sector; and incentives for other countries to take action.

USCAP's recommendations are based on six principles specifying that U.S. climate policy must:

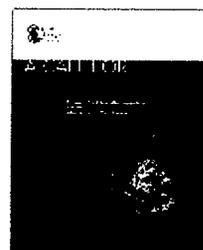
- Account for the global dimensions of climate change;
- Recognize the importance of technology;
- Be environmentally effective;
- Create economic opportunity and advantage;
- Be fair to sectors disproportionately impacted; and
- Recognize and encourage early action.

USCAP calls for mandatory reductions of greenhouse gas emissions from major emitting sectors, including large stationary sources and transportation, and energy use in commercial and residential buildings. The cornerstone of its proposed approach is a "cap-and-trade" program that places specified limits on greenhouse gas emissions. This will ensure emission reduction targets are met while simultaneously generating a price signal that will provide market incentives to stimulate investment and innovation in the technologies necessary to achieve the environmental goals. "To meet this challenge, we must have innovative technologies in the areas of energy production and

"We know we must address climate change. This group of companies and NGO's may not have sorted out every detail, but we are willing to take a leadership position and embrace open dialogue... that will get us all to our common goals of protecting our world for future generations. The changes that are needed can't be incremental; we need major breakthroughs."  
- Alain Belda

Founding news release  
→ go

USCAP web site  
→ go



"A Call for Action"  
USCAP's consensus principles and recommendations  
→ download pdf

Comments from founding USCAP executives  
→ download pdf

consumption and we must start here in the U.S.," said Belda.

"Sure, addressing climate change involves risks and costs. But much greater is the risk of failing to act. I am convinced that we can build a global plan of action on climate change in ways that create more economic opportunities than risks."

- Alain Belda

### Part of the Solution

Alcoa has long been a leader in addressing climate change. Our specific accomplishments—rooted in our culture of environmental stewardship—include:

- **Reducing greenhouse gas emissions by 25% since 1990**, a goal reached seven years ahead of our 2010 target date mainly through aggressive reduction of Perfluorocarbon (PFC) emissions.
- **Efficiently using energy**, thanks to the Alcoa Energy Efficiency Network established in 2002 as a partnership with the U.S. Department of Energy to conduct energy efficiency surveys at operating locations and identify areas of possible improvement. We were recognized as a national leader in energy conservation and environmental stewardship by the Industrial Energy Technology Conference Advisory Board in 2005
- **Increasing the use of aluminum to lighten the weight of vehicles**. Since 1990, increased use of aluminum in the world's vehicles has avoided burning 84 billion liters of gasoline and more than one billion metric tons of greenhouse gas emissions. If the amount of aluminum was increased from today's average of 250 pounds to 400 pounds, the nation's light vehicle fleet would achieve a 6% drop in gasoline consumption and 6% reduction in global vehicle carbon emissions.
- **Investing in green power** as a charter member of the U.S.-based Green Power Market Development Group. Alcoa purchased enough renewable energy certificates (RECs) to effectively power four of its corporate centers in the United States. These facilities are now effectively operating on electricity generated by projects that produce electricity from landfill gas, avoiding the emissions of more than 6.3 million kilograms (13.9 million pounds) of carbon dioxide annually.
- **Building a cleaner future**. Scheduled to open in April, our 320,000 mtpy smelter in Iceland will run on 100% hydropower, an abundant and renewable resource in Iceland, and has been built to comply with some of the most stringent environmental regulations in the world.
- **Planting ten million trees**, which can absorb more than 250,000 metric tons of carbon dioxide per year during their lifetime, by 2020.

"Even though we've made substantive changes to reduce greenhouse gas emissions, we can and should do better," said Belda. "In fact, we must do better." He explained that Alcoa must now use its leadership position to encourage others to change as well. "The changes that are needed can't be incremental—we need major breakthroughs," he said, explaining why we chose to be a founding member of USCAP. "Meeting the challenge ahead of us won't be easy—we recognize it will call for

significant change not only for others, but even for leaders such as ourselves. But I believe there is no other option. Much greater is the risk of failing to act."

**USCAP founding members****Industry**

Alcoa  
BP America  
Caterpillar  
Duke Energy  
DuPont  
General Electric  
PG&E  
PNM Resources

**NGOs**

Environmental Defense  
Natural Resources Defense Council  
Pew Center on Global Climate Change  
World Resources Institute

**USCAP founding principles**

- Account for the global dimensions of climate change
- Recognize the importance of technology
- Be environmentally effective
- Create economic opportunity and advantage
- Be fair to sectors disproportionately impacted
- Recognize and encourage early action



**CEBDS**  
Brazilian Business Council  
for Sustainable Development

Associated to  
 World Business Council for  
Sustainable Development

## CLIMATE DEFENSE ACTION COMPACT

Scientific evidence on the consequences of global warming has become irrefutable after the publishing of the 4th Report of the Intergovernmental Panel on Climate Change (IPCC).

There is consensus that society must be mobilized - at all levels and all over the world - to stop global warming in order to ensure that the increase of the average surface temperature of the Earth is no higher than 2° C. If effective measures are not urgently adopted, hurricanes, droughts, floods and damages to ecosystems and biodiversity will increase, endangering natural resources, businesses and our very own survival.

In response to the dramatic challenge of preserving the environmental health of the planet while ensuring economic growth, guided by the concern for sustainable development and poverty elimination, civil society organizations and the business community propose the formation of a Climate Defense Action Compact.

The Compact aims to promote the adoption by Brazil, in the short term, of actions that while they ensure the continuity of economic development, can contribute to reducing greenhouse gas emissions into the atmosphere.

These actions must include the acknowledgement of the value of a clean energy supply mix, incentives for technological innovation, introduction of more sustainable consumption patterns and the creation of political, legal and economic mechanisms that, through a transparent and participatory process, allow the establishment of a pro-active and constructive agenda in Brazil.

In global terms, the challenge is to strengthen the global climate change regime, the Kyoto Protocol, and to fight to prevent the CO<sub>2</sub> concentration in the atmosphere from increasing beyond dangerous thresholds. To do so, industrialized countries will have to reduce their emissions levels in the short term. Developing countries should seek sustainable alternatives for growth, observing the principle of common but differentiated responsibilities.

Brazil is privileged in already having a relatively clean energy generation mix, unlike most other countries that, to meet their energy demands, widely use fossil fuels (coal, oil and natural gas), deemed to be the agents most responsible, globally, for increasing CO<sub>2</sub> concentrations in the atmosphere.

Even so, Brazil is the planet's fourth largest emitter of greenhouse gases. About 75% of our emissions come from changes in the use and occupation of land, farming and, essentially, deforestation in the Amazon. Far more intense mobilization than seen today is required to respond to the challenge and to change this sad scenario within the needed timeframe.





**CEBDS**  
Brazilian Business Council  
for Sustainable Development



Therefore, the Climate Defense Action Compact proposes the participation of the entire Brazilian society – governments, businesses and civil entities - in combating global warming, by implementing actions capable of transforming reality and disseminating positive examples and solutions, and by establishing a National Climate Change Policy, based on ten items:

- 1) Put a stop to deforestation, ensuring greater forest governance, through policies to combat deforestation in the Amazon, in the Atlantic Forest and other Brazilian forest regions and strengthen the institutions responsible for implementation and oversight ;
- 2) Foster initiatives to introduce energy from renewable sources into the Brazilian energy supply mix, in a sustainable manner, making use of the huge potential of the country in this area;
- 3) Raise awareness of society in general with respect to the adverse effects of climate change and to the measures that are being undertaken to reduce our emissions;
- 4) Identify Brazil's vulnerabilities to climate change, including those related to biodiversity, and define the required adaptation measures;
- 5) Establish emissions reductions targets that can be adopted by companies and the country and formalize an international position that is more active and committed to the reduction of greenhouse gas emissions, involving public, private and civil society institutions;
- 6) Broaden the membership of the Interministerial Commission on Climate Change, ensuring the active participation of other sectors of society, such as companies and civil society organizations, including in the formulation of the Brazilian position in international forums on the issue;
- 7) Foster research that promotes the economic value of our biodiversity;
- 8) Take into account and prioritize socio-environmental issues, including climate change, in the actions and programs of the Multi-Year Plans;
- 9) Encourage the dissemination of positive examples, such as energy efficiency programs and expansion of the sustainable use of renewable fuels;
- 10) Foster the development of a national market for clean energies such as solar, wind and SHP.

Aware of the magnitude of the problem, the institutions that support this document believe that combating global warming requires broad coordination among all sectors of society and that each decision made must be in line with a strategic vision, which favors the simultaneous and balanced pursuit of economic and environmental benefits for mankind and for the planet as a whole.

Through this Climate Defense Action Compact, the signatory institutions undertake a public commitment in defense of the future.



**Remarks by John Pizzev  
Executive Vice President, Alcoa  
Annual Meeting of the Aluminum Association  
Nemacolin, Pennsylvania  
September 30, 2002**

Thanks for the introduction Steve. it is a pleasure to be here...

Steve titled my remarks "Global Climate Change — Alcoa's Sustainable Development Initiatives."

This title acknowledges that Alcoa has moved beyond the debate about the science of climate change to addressing what is now demanded by the community — that industry must produce more and more to meet higher consumer demand while at the same time integrating social and environmental values into their operations. While there is little understanding within the community about the implications of these demands, the very real trade-offs involved, that lack of understanding does not absolve us from the obligation to manage these competing imperatives. To some extent we have encouraged this expectation by accepting incremental demands without informing the community that they impose significant social, economic and environmental costs that are eventually reflected in the availability and affordability of the goods they require.

The demand to address climate change puts this question up front. Yes, we can and are introducing and implementing policies and practices to mitigate the impact of human influence on the global climate.

Climate change has become the "bell weather" for sustainable development at the expense of the broader discussion required to address the key issues of economic growth and social needs.

The truncation of sustainable development to "*sustainability*" has shortchanged industry on its successes in the implementation of major structural and technological developments at a global level.

Global problems demand global solutions, and with the increasing integration of China and Russia, we have seen the emergence of a truly global market in aluminum that puts a global solution within reach.

The integration of the Russian Industry into the world aluminum business has been achieved. The two major groupings in the Russian industry, RusAl and SUAL, are taking their place in the world forum. Active participation in the International Aluminum Institute is now planned, as they become mature members of the industry.

Similarly, the opening of China as a major market competitor and place for investment has brought the last big building block of our industry to the world stage. At the next meeting of the IAI the Chinese industry should be welcomed as members and we must allow for the future incorporation of their statistical data into the world supply and demand. Their performance data will allow true global comparison of world operating practices.

The rapid integration and opening of these markets combined with increased investment flows and mobile capital provide the incentive and the means to widen the adoption of sustainable development principles.

There have also been significant successes in the application of technology to both cost and customer demands from the beverage to aerospace and automotive sectors. The battle to make aluminum an integral part of the automotive manufacturing industry has turned from a glimmer of hope when I started in the industry 30-plus years ago to substantial victory. In the last decade alone, the use of aluminum in cars has doubled as consumers demand improved performance, safety and gas mileage without sacrificing vehicle size.

However the market and our customers demand that we stay responsive to their changing needs and circumstances. They have set us a number of challenges that we must recognize and resolve.

What are these challenges?

First of all, the entire industry is caught in a massive supply/demand squeeze. Prices are eroding, as indicated by trading on the London Metal Exchange.

This squeeze comes at a time when the industry must attract capital to invest in new plants — to meet the expected demand from growing economies, to replace older production facilities with more efficient systems and to meet ever-increasing environmental requirements.

The industry is global. The problems are global and the economic solutions are global. So, too, must be the application of sustainable development principles.

Sustainable development is a concept that allows us to address how we do business, how we interact with our plant communities and other stakeholders, and how we look at public policy issues.

It is in this context that Alcoa has made a significant commitment to address climate change. This is a core issue for us, and for the global aluminum industry. Leave the environmental drivers aside, the commercial imperatives are pressing. When Australia, my home country, tries to ban aluminum use at the Sydney Olympics because of greenhouse issues, I know we have a problem.

Addressing climate change makes long-term economic sense.

I particularly want to stress the phrase "long term", because that is what we are faced with. We need to act now so we can hand over to our successors an enterprise positioned for future growth that is, in fact, sustainable, renewable and lasting.

In my opening remarks I said we no longer debate the science of climate change at Alcoa. While the science may not be perfect, Alcoa believes that the build-up of carbon dioxide and other greenhouse gases in the atmosphere is evidence enough that current activities associated with fuel consumption and land-clearing are not sustainable.

We have committed ourselves to reduce our greenhouse gas emissions by 25% by 2010 from a base year of 1990 on an absolute basis, with no adjustment for the significant production increases that we have had since 1990 and expect to have by 2010. I'm pleased to tell you that we have already reached 90% of our goal. If the inert anode technology is fully commercialized by 2010, we can actually achieve a 50% reduction in our greenhouse gas emissions.

The inert anode is an exciting development. There have been hurdles unforeseen at the start but most have been jumped. We can see success but I am not announcing that tonight because this is still "Big R" in research and development. But we have shown the scientific validity of the process and other senior players in the industry are starting to file patents on similar issues.

This is the industry playing to its strengths — the ability to marshal the financial, scientific and technical resources to create sustainable solutions to existing challenges, and to those that are sure to emerge over the long term.

What should we, as an industry, do to address climate change?

- We should continue to reduce our greenhouse gas emissions. We should commit to increasing our energy efficiency and reducing our emissions intensity.
- We should focus on efficiency as the key to emissions reductions, while continuing to deliver the economic means for achieving environmental and social goals.
- Greenhouse gas emission reduction measures start at the shop floor. As an example, we have completed a study at one Alcoa plant and identified investments of \$16 million in greenhouse projects that can produce annual cost savings of \$6.6 million and reduced carbon dioxide emissions by 193,000 tons a year.

As an aside, let me say that we can address other emission issues alongside climate change, using the same process. Alcoa has committed to cutting all its major emissions over the next decade ... by as much as 60% for SO<sub>2</sub>, 30% for NO<sub>x</sub>, 50% for VOC and 80% for mercury. We are ahead of schedule in meeting those goals today.

To help ourselves succeed and to show that aluminum has high sustainability value, we need to make sure that what we do is transparent and measurable.

One tool to do this is Life Cycle Analysis. LCA allows us to demonstrate the long-term value of our products and the renewable nature of aluminum, and to communicate those characteristics to our stakeholders. And we must be willing to have our reports verified by outside parties. Slogans, self-promotion and advertising won't get us there.

The International Aluminium Institute in London has been working on life cycle analysis for more than four years and has published reports on the use of aluminum in automobiles and construction.

At Alcoa, LCA is an integral aspect of our sustainable development initiatives. We once said that our real impact on the environment could be judged only in terms of a full "cradle-to-grave" analysis. Today, we look at LCA as "cradle to cradle" because full recyclability translates into an enduring expression of sustainability. For example, a typical passenger car can replace two kilograms of heavier materials with one kilo of aluminum, and save the equivalent of 20 kilograms of CO<sub>2</sub> emissions over the life of the car. In buses and long haul trucks with longer life spans the reduction in GHG emissions can be twice as much. Whatever engine drives the vehicles of the future (fuel cells or hybrids), aluminum will continue to be a critical part of any strategy to reduce emissions in transportation.

Sustainability requires environmental excellence, economic success and social responsibility. This is the Alcoa Business System at work. We have developed a strategic framework that allows each of our businesses worldwide to develop its own goals and action plans within that framework. The set of goals we have established will serve as milestones along the way to our ultimate vision of a company where:

- All wastes have been eliminated
- Products are designed for the environment
- The environment is fully integrated into manufacturing
- The workplace is free of injuries, spills and leaks, and
- Alcoa is recognized as a leader and partner in every community where it has operations.

In fact, we are now developing a new goal:

- By 2020, 50 percent of our products, except raw ingot that we would sell to others directly, will be made from recycled aluminum.

In a little over a century of use, Aluminum has a proven record of enduring and renewable use; approximately two-thirds of aluminum ever produced — 440 million tons of 680 million tons manufactured since 1886, up to 440 million tons — is still in use. Setting this goal will allow us to build on that record of a truly sustainable metal.

Next year, Alcoa will begin filing a Sustainable Development Annual Report following the guidelines established under the Global Reporting Initiative. This detailed report will present a clear and total picture of the economic, social and environmental performance of our company in one document.

These actions are not just about the United States. These actions are global in nature. Aluminum industry trade associations outside the US are addressing and moving forward on Sustainable Development.

I believe every member of the Aluminum Association not already involved in addressing Sustainable Development needs to do so and do so quickly.

Adopting a philosophy of pursuing maximum efficiency and minimum environmental impact, measuring progress towards our goals and publicly reporting our progress is key to the future success of the industry. We also need to be open in recognizing that we have problems to address and be about addressing them in plain view.

Large corporations with their organizational skills and ability to operate across international boundaries are particularly well equipped to meet the needs of global society. Both community and governments are challenging us to go beyond our traditional role of efficiently meeting their economic needs — they are telling us that it must be done with a smaller environmental and social footprint.

This point was emphasized in the outcomes of Johannesburg Summit where it was made clear that governments require our involvement in extending the benefits of prosperity.

If we are to differentiate our industry and have our message lifted above the noise of the crowd, we must define our commitment with clearly visible and disseminated results. Unless we are perceived to be a sustainable enterprise, new smelters will not be permitted, new mines will not be allowed, new residue ponds will not be approved and electric power projects for our industry will not be built.

If industry is to succeed it must both accept and respond to the challenges embodied in sustainable development. Our role is to exploit our significant resource base (capital, research and intellectual) and partner with the community in the creation of worthwhile enterprises that create value for shareholders and community alike.

I urge the leadership of the Aluminum Association to adopt an aggressive approach to Sustainable Development that positions the organization and its members as leaders and innovators.

Thank you again for the opportunity to be with you tonight



Select a country, a year, or both from the menu below to view other progress reports.

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### Worldwide - 2003

## Continuing Commitment to Green Power

Alcoa is committed to decreasing its reliance on fossil fuels by increasing the use of natural, renewable energy sources that help lower CO2 emissions and contribute to the fight against global warming.

Since 1917, Alcoa has been committed to owning, operating, and continually improving its North American hydroelectric assets, which generate an average of 5.4 billion kilowatt hours of electricity each year for Alcoa operating locations.

Alcoa is also actively increasing its supply of cost-effective renewable resources and supporting the Green Power Market Development Group. Between 2000 and 2002, Alcoa purchased more than 32 million kilowatt hours of electricity generated from landfill gas as part of its North American electricity supply portfolio.

In Brazil, Alcoa has been participating, as a minor partner, in the development of hydropower projects that extensive and comprehensive studies approved by the appropriate national and state environmental and development agencies show to be environmentally sound, socially responsible, and economically feasible. In Iceland, the company will be the principal customer for a new hydroelectric generation facility when its newest primary aluminum facility comes online in 2007.

In October 2003, Alcoa began purchasing renewable energy certificates (RECs) equivalent to 100% of the electricity used annually at four corporate offices: Alcoa Primary Metals and Alcoa Materials Management headquarters (Knoxville, Tennessee, USA), Alcoa headquarters (Pittsburgh, Pennsylvania, USA), the Alcoa Business Service Center (Pittsburgh), and Alcoa's global office (New York City, New York, USA).

RECs are a new type of renewable energy product that consumers can buy to reduce the environmental impact of their activities. RECs represent the environmental attributes or avoided emissions when electricity is generated from renewable resources instead of from fossil-fuel sources (e.g., coal, oil, natural gas).

The RECs Alcoa is purchasing effectively mean that the four corporate centers listed above are now operating on electricity generated by projects that produce electricity from landfill gas, avoiding the emissions of more than 6.3 million kilograms (13.9 million pounds) of carbon dioxide annually. Looked at in another way, this is equivalent to the average amount of carbon dioxide that would be absorbed annually from the atmosphere by roughly 250,000 trees over the course of their lifetime.

### Related Sites

### Alcoa in Brazil

Alcoa shares the Brazilian federal government's assessment for term hydroelectric development for and economic development in country.

→ more

**Green Power Market Development Group**

This site, run by 12 leading corporations and the World Resources Institute, is dedicated to building corporate markets for green power.

→ [Related Site](#)

**World Commission on Dams**

Learn more about the international effort to address the controversial issues surrounding large dams.

→ [Related Site](#)

**Alcoa in Brazil**

Alcoa has a significant presence in Brazil.

→ [Related Site](#)

**Alcoa in Iceland**

Learn more about Alcoa's expanding presence in this country.

→ [Related Site](#)



## 2020 Strategic Framework for Sustainability

Developed in 2000 by an internal worldwide team that analyzed environmental and social trends since 1990 and looked 20 years into the future, Alcoa's 2020 Strategic Framework for Sustainability has since evolved into a comprehensive roadmap for our businesses and locations to integrate all aspects of sustainability into their day-to-day operations.

The framework is built around six focus areas:

- Economic benefit;
- Respect and protect people: employees;
- Respect and protect people: communities;
- Safe and sustainable products and processes;
- Meet the needs of current and future generations through efficient resource use; and
- Accountability and governance.

Included are long-term targets and short- and long-term metrics for each focus area that were agreed upon with the business leaders and technical experts throughout the company. These targets are very aggressive and are designed to stretch the organization to think differently to drive optimum performance, as opposed to conservative objectives that we would be fairly certain we would meet. Accordingly, we may fall short of some of these goals, but we will be transparent about reporting such shortfalls as well as what we hope to do to continue on the path.

To support the framework, we expanded our metrics system to collect the data needed to measure performance against the goals and targets on an annual basis.

The framework and enhancements to the data-collection systems allow us to focus employee attention on sustainability, make everyone aware of the importance of the issues, and demonstrate management commitment to getting the job done right. It also helps employees do the right things by clearly stating what these "things" are and how best to go about doing them.

<b>ECONOMIC BENEFIT</b>			
	<b>Target</b>	<b>Metric</b>	<b>Progress Achieved Through Year-End 2007</b>
1	Maintain a strong balance sheet	Debt-to-total capitalization consistently between 30% and 35%	30.2% → go
<b>RESPECT &amp; PROTECT PEOPLE: EMPLOYEES</b>			

	Target	Metric	Progress Achieved Through Year-End 2007
2	Elimination of occupational illnesses and injuries	Zero fatalities	Five fatalities → go
		Zero lost workday rate	0.12 lost workday incident rate → go
		Zero total recordable injuries	1.35 total recordable incident rate → go
		From base year 2006, achieve at least a 20% reduction in the number of employees requiring protective measures against unacceptable noise levels by 2008	12% → go
		From base year 2006, achieve at least a 20% reduction in the number of employees requiring protective measures against unacceptable workplace exposure to chemicals by 2008	15% → go
3	Culture of health	Number of employees participating in culture of health initiatives	97% of established locations had health promotion activities (We currently do not aggregate employee participation data at the corporate level.) → go
4	Ensure a workforce that reflects the diversity of the communities everywhere we operate	By 2010, the following representation at Alcoa's management level: Global women: 18% U.S. minority: 15%	Global women: 14.6% U.S. minority: 12.8% → go

5	Increase workforce performance	100% of salaried employees receiving annual performance feedback by 2006	Approximately 85% → go
<b>RESPECT &amp; PROTECT PEOPLE: COMMUNITIES</b>			
	<b>Target</b>	<b>Metric</b>	<b>Progress Achieved Through Year-End 2007</b>
6	All Alcoa operations understand the communities in which they operate	100% of manufacturing locations will implement the Alcoa Community Framework by 2010.	90% of worldwide operating locations had established community programs → go
7	Contribute to healthier, safer, and more sustainable communities everywhere we operate	40% of employees within a business unit or region volunteered in the community through ACTION, Bravo!, or Month of Service	ACTION: 7.73% Bravo!: 8.54% Month of Service: 15.99% → go
<b>SAFE &amp; SUSTAINABLE PRODUCTS &amp; PROCESSES</b>			
	<b>Target</b>	<b>Metric</b>	<b>Progress Achieved Through Year-End 2007</b>
8	Increase recycling of aluminum	25% recycled aluminum content in fabricated products by 2010; 50% by 2020	Ratio of purchased scrap to total fabricated product shipments was 30%. However, the total amount of recycled metal in our products is somewhat lower since a portion of the purchased scrap would have been included in primary ingot sold to third parties. → go
		Increase the North American used beverage can recycling rate to 75% by 2015	52% → go
<b>MEET THE NEEDS OF CURRENT AND FUTURE GENERATIONS THROUGH EFFICIENT RESOURCE USE</b>			
			<b>Progress Achieved</b>

	Target	Metric	Through Year-End 2007
9	Improve resource use to reduce environmental "footprint"	From base year 2005: 10% reduction in selected material use by 2010 • 2006: Collect data • 2007: Commence reporting	Businesses have worked to identify major raw materials for which a reduction target could be considered. → go
		From base year 2000: 50% reduction in landfill waste by 2007; 75% reduction by 2010; 100% reduction by 2015	52% → go
		Reduce energy intensity by 10% by 2010	We are pursuing several production transformation projects that, if successful, will allow us to achieve this goal. → go
		60% reduction in process water by 2009; 70% by 2010	26% → go
		From base year 1990: 25% reduction in greenhouse gas emissions by 2010. Assuming success with the inert anode technology, a 50% reduction by 2010	33% → go
10	Practice cleaner production to reduce environmental emissions/impacts	From base year 2000: 60% reduction in sulfur dioxide (SO2) by 2010	31% → go
		50% reduction in volatile organic compounds (VOCs) by 2008; 60% reduction by 2010	44% → go
		30% reduction in	50%

		nitrogen oxides (NOx) by 2007; 50% reduction by 2010; 85% reduction by 2015	→ go
		80% reduction in mercury emissions by 2008; 90% reduction by 2010; 95% reduction by 2015	10% → go
		Zero process water discharge by 2020	Initial efforts to control process water are being managed through the process water reduction target. → go
<b>ACCOUNTABILITY &amp; GOVERNANCE</b>			
	<b>Target</b>	<b>Metric</b>	<b>Progress Achieved Through Year-End 2007</b>
11	High audit performance	No material weaknesses in the design or operation of internal controls over financial reporting, which are reasonably likely to adversely affect Alcoa's ability to record, process, summarize, and report financial information	Alcoa continued to meet the goal of no material weaknesses in the design or operation of internal controls over financial reporting. → go
12	Ethics and compliance	Resolution of 90% of cases reported on the Compliance Line within 12 working days by 2009	Employee relations calls, including those involving payroll or benefit determination issues, were resolved within 12 working days 62% of the time in 2007. Calls concerning more substantive issues require significantly more time for proper resolution. As such, this metric will be reevaluated in 2008. → go

Providing this clear measurement of our progress both internally and externally will lead to stronger tactical planning for businesses through an integrated approach.



At Alcoa, our vision is to be the best company in the world.



At Alcoa, our vision is to be the best company in the world--in the eyes of our customers, shareholders, communities and people. 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, coworkers, 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 behaviors, actions and results.

We live our Values and measure our success by the success of our customers, shareholders, communities and people.

**THE IMPORTANCE OF RECYCLING TO  
THE ENVIRONMENTAL PROFILE OF METAL PRODUCTS**

*K. J. Martchek  
Alcoa Inc.  
201 Isabella Street  
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**ABSTRACT**

This introductory presentation will highlight recent efforts to quantify the positive value of recycling metals such as aluminum, magnesium, lead, zinc, nickel and copper in relation to the three pillars of "sustainable development" – environmental protection, economic development and improve social consequences.

This presentation will provide an overview of life cycle assessment profiles increasingly being utilized by customers, regulators and environmental advocacy groups to holistically evaluate the environmental performance of materials and products. The environmental profiles of products containing recycled metal will be presented based on rules established by the International Organization for Standardization (ISO).

Significant to the life cycle profile of metal products is recent confirmation that recycling has the potential to reduce materials production energy consumption by 95% for aluminum, 80% for magnesium and lead, 75% for zinc, and 70% for copper. Furthermore, "metals are eminently and repeatedly recyclable, while maintaining all their properties (1)." Their durability relative to many hydrocarbon based materials enhance their life cycle performance. However, the persistence of metals when dispersed into our natural environmental makes recovery and recycling particularly important. Overall, when considering life cycle effects, recycling is critical to a sustainable future for metal products.

Finally, regional and international regulations will be highlighted which will effect the efficient recovery and recycle of metals and their overall contribution to environmental protection, economic development and the enhancement of society.

## INTRODUCTION

The organizers of this symposium have noted in their brochure that "recycling has become increasingly important to society and industry to meet the goals of cost reduction, efficient management of limited resources, and reduced landfill utilization."

Academics, environmentalists and governmental agencies in their own words would agree that recycling is one viable strategy for moving toward "sustainable development", that is, "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" as originally defined in the Brundtland Commission report of 1986.

How do you assess the environmental "sustainability" or value of recycling? One way is to look for impacts on our natural environment, for instance, on the effects on local vegetation, wetlands or wildlife populations effected by recycling activities. However, detecting actual impacts is time consuming and difficult at best. Furthermore, focusing on impacts adjacent to recycling operations provides a very limited perspective of sustainability. For instance, it is difficult to observe the contribution of recycling activities on regional environmental impacts such as acid rain or smog generation. In addition, it is beyond today's science to observe impacts on global environment parameters such as ozone depletion or climate change.

One emerging method for evaluating environmental sustainability is called "life cycle inventory assessment." These assessments quantify all of the resources consumed and all of the emissions to our natural environment associated with an activity such as recycling or associated with a product such as a metal container or metal components used in airplanes or railcars. A life cycle inventory assessment (LCI) provides a quantitative summary of energy, water and resource consumption. It also quantifies all of the major wastes, water contamination and air pollution associated with a product from its "cradle" to its disposal or to its recover and recycle. Figure 1 illustrates for an aluminum product the holistic scope of a life cycle inventory in accordance with international standard ISO 14,041.

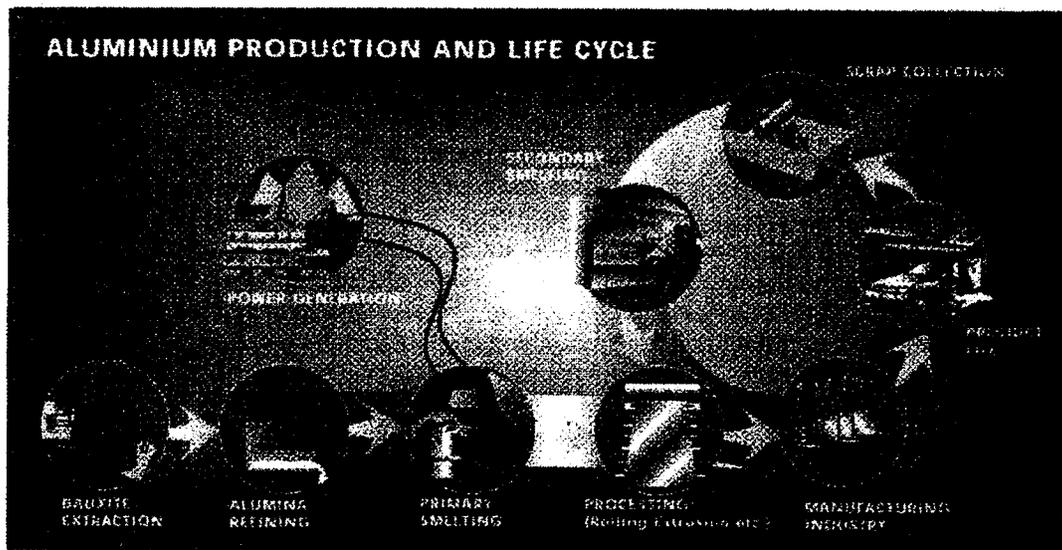


Figure 1 – Life Cycle Scope of Aluminum Products

Note that scrap collection and secondary smelting (that is, metal recycling) is an essential part of any life cycle assessment. Quantitative data on resource consumption and environmental emissions is gathered and aggregated for each of these major activities when conducting a life cycle inventory. Table I illustrates a summary of typical results for the production, consumer use and recycling of 1000 aluminum beverage containers.

Table I – Life Cycle Results for 1000 Aluminum Beverage Containers

Energy	Megajoules	Process Energy	3227
		Transport Energy	410
		Feedstock Energy	414
Air Emissions	Kilograms	Particulates	0.45
		SOx	1.4
		NOx	1.0
		CO	1.1
		CO2	24.5
		Organics	0.64
		Fluorides	0.01
Water Effluent	Kilograms	Chlorides	0.02
		Total Solids (TSS)	14.5
		Oils/ Grease	0.0091
		Fluorides	0.0001
		Total Al	0.0014
		Other metals	0.015
		Organics	0.013
Solid Waste	Kilograms	BOD	0.22
		Process Related	36.8

Life cycle inventory assessments are increasingly being utilized by customers of metal and other material products, regulators and environmental advocacy groups to holistically evaluate environmental performance along today's increasingly complex supply chains.

For instance, the U.S. Environmental Protection Agency recently issued a report on "Data Sets for the Manufacturing of Virgin and Recycled Aluminum, Glass, Paper, Plastic, and Steel Products" (2) for "evaluating the relative cost and environmental burdens of integrated municipal solid waste management strategies." Similar assessments related to metal products have been conducted in the US for freight transport (3), in Japan for motor vehicles (4) and in Europe (5) for packaging.

### LIFE CYCLE INVENTORY OF METALS RECYCLING

Now that you have a set of these quantitative estimates of energy consumption, waste generation, water contaminants and air pollutants, how do you assess environmental sustain ability or protection of our natural environment ?

As a first step, you can look for products or activities which over their life cycle generate less pollution and which consume less of our natural resources. Typically different products are high and low in different environment burdens and answers to questions such as "paper or plastic" can be complex. Perhaps a more useful use of life cycle inventories is to look for activities where improvements would reduce pollution or the consumption of resources by the greatest amount. For instance, Figure 2 indicates that ingot casting is the largest consumer of water in the production and use of aluminum components (6). Reducing water in casting operations would have the greatest effects on life cycle water consumption and would be

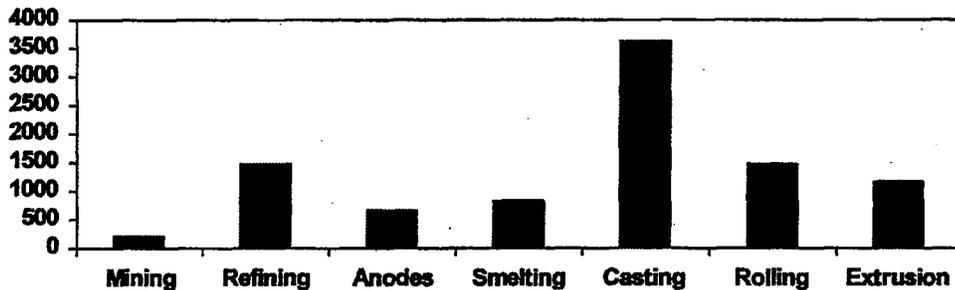


Figure 2 - Water Consumption (liters per metric ton of output) -  
Aluminum Production Activities

particularly significant in regions where freshwater is a scarce resource.

Similarly, a recent study by the North American automotive manufacturers (7) indicated that vehicle usage over the typical 200,000 kilometer life of a auto or light truck generates considerable more greenhouse gas emissions than in the production of materials, vehicle

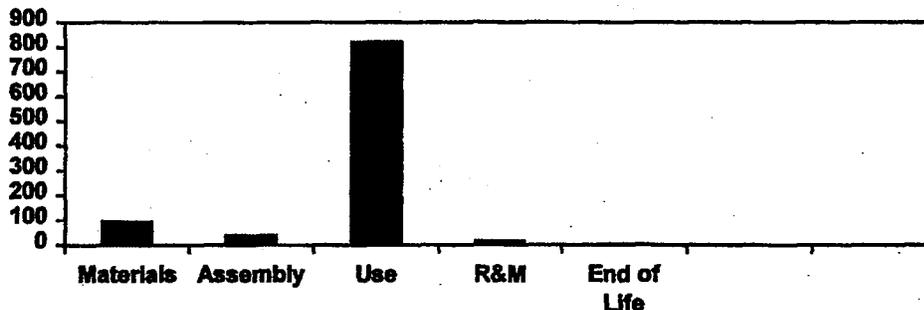


Figure 3 - Vehicle Energy Consumption (Gigajoules per vehicle)

assembly, repair & maintenance, and end-of-life recycling as illustrated in Figure 3. Reducing fuel consumption in vehicle operation therefore has the greatest effect in producing sustainable transportation from a greenhouse gas point of view.

What does this mean for recycling ? What can life cycle inventory assessments tell us about the sustainability of recycling metals ?

First of all, recent industry studies (1,6,8) confirm that recycling has the potential to reduce energy consumption to produce metals such as aluminum, magnesium and lead by 80%, zinc by 75% , and copper by 70%. The dramatic decrease in the energy content of magnesium die casting (8) is illustrated below in Figure 4:

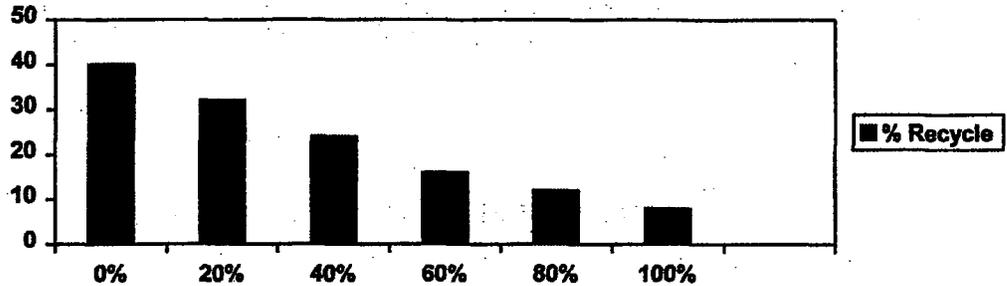


Figure 4 - Energy Consumption (kwh per kilogram) - Magnesium Die Castings

Now let's look in at the benefit of recycling on the total life cycle greenhouse gas emissions associated with producing, using and recycling a magnesium die cast part. Figure 5 shows the life cycle emissions of carbon dioxide equivalents for the "first life cycle" of a part initially made from primary magnesium and for subsequent life cycles for parts made from metal recycled from this original part:

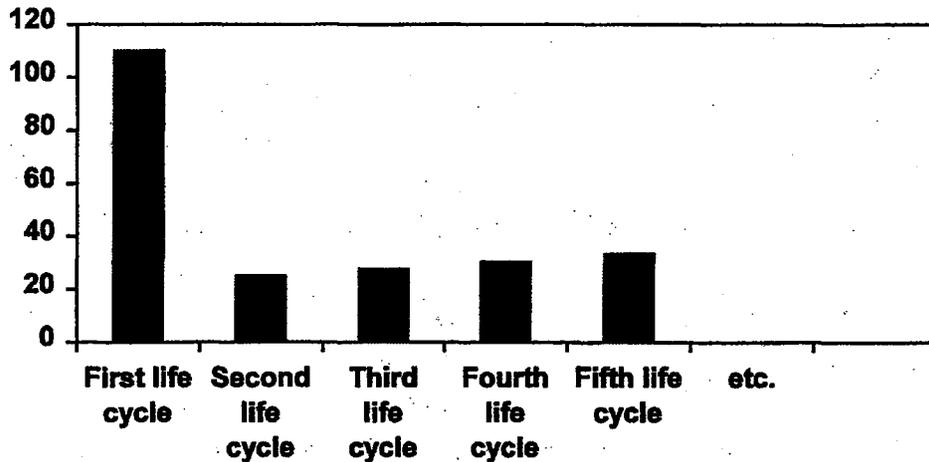


Figure 5 - Greenhouse Gas Emissions ( Kilograms of CO2e per part ) - Magnesium Cross Car Beam

This diagram quantifies the relative value of recycling of magnesium parts on the life cycle emissions of greenhouse gases. Even when considering collection and melt losses, it shows the importance of recycling relative to climate change issues.

Similar life cycle results can be drawn for other metals and environmental issues and the reader is referred to ISO Technical Report 14049, "Illustrative Examples on How to Apply ISO Life Cycle Assessment Inventory Analysis (9)."

In a recent example of applying ISO rules, the Swedish Environmental Protection Agency (Naturvardsverket) recently concluded from a life cycle study that "the environmental benefits of packaging recycling are to be valued higher than the possible negative effects due to increased transport (5)."

### VALUE OF METAL RECYCLING

As mentioned earlier, in addition to environmental protection, sustainable development must also be based on sound economic development and social consequences.

Here metals products have both favorable economics, and social implications due to their durability and extended service life. For instance, aluminum postal and UPS trucks are cost effective because they are lightweight (saving substantial amounts of gasoline consumption over time) and robust with average service life exceeding 20 years.

Furthermore, the relatively high value of recycled metal helps to sustain the economics of today's automotive and municipal recycling schemes (10) as illustrated in Figure 6.

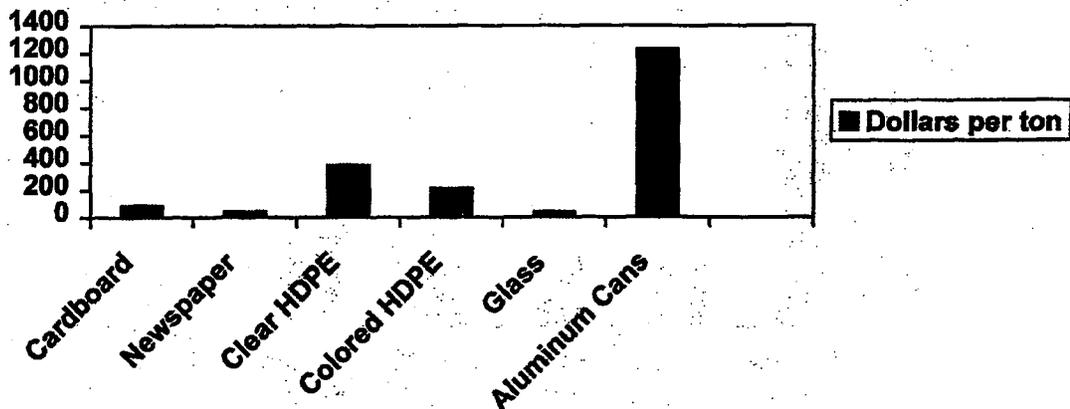


Figure 6 - Market Price of Municipal Collected Materials

While market prices fluctuate, the recovery of metals typically represent the largest source of revenue for material recovery facilities . (Further enhancing the economics of recycling through advances in technology and practices is the predominant theme of many of the technical papers prepared for this conference. )

As previously mentioned, we also need to look at social consequences of an activity to support the principal of sustainable development. For instance, although a life cycle inventory assessment would quantify energy and emissions associated with the production and use of a refrigeration units, today' cooling units provide social and health benefits related to the preservation of food and the comfort of air conditioning.

Similarly, recycling provides social benefits related to minimizing waste landfills, reducing odors and congestion associated with the transportation of disposable wastes, and generating employment for collection and recycling activities.

"Recycling is one of the best risk management tools available, as it allows to reduce and even eliminate any risk that may be eventually generated by the disposal of products at their end-of-life (1)." Recycling is particularly significant for metals because metals are persistent and do not readily degrade when disposed into our natural environment. Therefore, metals may accumulate in sediment or migrate into groundwater. Recovery and recycling is truly key to the sustainable future of metals.

## REGULATIONS AND TRENDS

Given these indications that recycling protects our natural environment, it is surprising that we must continue to address well intended, but misguided legislation and regulations which inhibit the recycling of metals.

For instance, metals and other materials to be recycled are still characterized as "waste in European legislation, because they are seen as discardable materials. This erroneous characterization has also led to a restriction of the movement of secondary raw materials within the European Union (1)." In a similar fashion, the Basel Convention, which was an international treaty to inhibit dumping of hazardous materials in developing countries, also confused recyclable materials with solid waste . Fortunately, the development of Annex IX made it clear that traditional recyclables were not intended to be within the scope of this treaty. Nevertheless, certain materials such as insulated copper wire are not on the Annex IX list and are still subject to shipment restrictions to developing nations. Fortunately, other governing bodies have taken a more pragmatic approach such as the OECD who have drafted rules to protect the environment for trans-border shipments using a risk-based approach to material shipments (11). Elsewhere, provisions in the U.S. Resource Recovery and Conservative Act and new Superfund Recycling Act of 1999 as well as rules in the United Kingdom remove some of the doubt "when scrap metal is a waste and when it is a raw material for recycling."

In the U.S. and elsewhere, increasing more stringent air emissions requirements and documentation have the potential to significantly effect metal recycling operations. For instance, new Secondary Maximum Achievable Control Technology (MACT) standards have been promulgated for secondary aluminum operations which will increase costs associated with scrap characterization, monitoring, control equipment and documentation.

Targets for incorporating recovered scrap back into electronic items, packaging, automotive components, buildings and other products have been initiated or proposed by state and regional regulators in an attempt to encourage recycling. However, these targets must be set with full consideration of the long life cycles (durability) of metal products. For instance, Mr. Paul Bruggink in a paper to be presented this afternoon (12) will show modeling results as illustrated in Figure 7 which graphically highlight the relationship between the availability of end-of-life metal flows and product growth rates and product service life.

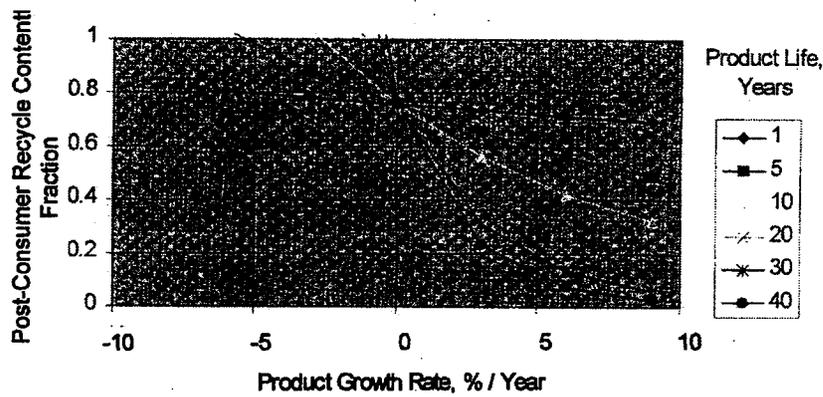


Figure 7 - Post-Consumer Scrap Availability vs. Product Growth Rate & Product Life

For example, if a metal products annual market growth rate is 5%, a post consumer scrap fraction above 0.50 (50%) is not theoretically possible for durable products. Therefore, regulatory schemes based on post consumer scrap targets must take into account market growth and metal durability to be achievable.

Truly, one-size regulations do not fit all products and regulators need to recognize the distinct properties and market dynamics of metals. Recycling is indeed important to environmental protection, particularly for metals, and we need regulatory considerations that recognize its value and encourage its "sustainability."

## CONCLUSION

In conclusion, this paper has highlighted recent efforts to quantify the life cycle advantages of recycling metals such as aluminum, magnesium, lead, zinc, nickel and copper in relation to the three pillars of "sustainable development" – environmental protection, economic development and improve social consequences.

Regional and international regulations have and will continue to effect our collective efforts to maximize the value of recycling. Advances in technology will help to mitigate and improve recycling efficiencies and economics. The rest of this conference will describe the latest developments to commercialize new technology so that recycling and metal products can continue to be desirable and "sustainable" in this new century.

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## Sustainable Management of Natural Resources

# Modelling More Sustainable Aluminium: Case Study

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### Abstract

**Goal, Scope and Background.** This case study describes the development and utilization of a global, quantitative model of current and projected aluminium and life cycle inventory mass flows. The model and key results were developed to be shared with global aluminium industry technical experts, executives, and external stakeholders to better understand potential paths to more global sustainable aluminium.

**Methods.** The model is based on annual statistical data since 1950 provided by government agencies and regional aluminum associations and on the most recent life cycle inventory intensity data (year 2002) compiled for the global industry by the International Aluminium Institute. Modeling of future aluminium and resource flows are based on literature and industry expert projections of future product shipment demand. The availability of recycle flows to meet these market demands are based on projected utilization, yield, and melt loss recovery rates, post-consumer recycling rates, and anticipated future product lifetimes. The model was developed with quantitative 'what-if' capability to determine the positive impact of enhanced recycling, lower resource intense production, and product usage scenarios.

**Results and Conclusion.** The model provides the first quantitative assessment of annual global aluminium and life cycle inventory flows. Results include a quantitative estimate by major market of global aluminium product inventory, system losses, recycle rates, and selected resource requirements and air emissions implications.

**Recommendation and Perspective.** Model results and scenarios have been reviewed and shared with global aluminium technical leaders, executives and key external stakeholders in support of the International Aluminum Institute's new voluntary global objective to better monitor and enhance aluminium recycling and sustainable development initiative.

**Keywords:** Aluminium; emissions and energy intensity; global resource flows; life cycle management; natural resources; recycling; sustainable management

### Introduction

Statistics on the resources flows required to produce primary and recycled aluminium are incomplete on a global basis. In addition, there has not been a consensus or quantitative estimate of future resource flows related to aluminium production or the potential availability of less resource intense end-of-life aluminium (recycled) metal to meet ever increasing consumer and developing nation needs.

### 1 Goal and Scope

A model was developed by Alcoa Inc. [1] to provide a quantitative understanding of historic and today's (year 1950 through year 2003) worldwide aluminium mass flows and systems losses. In addition, current and future resource requirements and life cycle inventory flows were estimated by coupling these global aluminium mass flows with global, average life cycle inventory intensity data [2] developed from a majority of producers via the International Aluminium Institute (IAI). The model was also developed to provide quantitative scenario development capability to determine the positive impact of enhanced recycling, lower resource intense production, and product usage scenarios. The model and key results information were developed to be shared with global aluminium industry technical experts, executives, and external stakeholders to better understand potential paths to more global sustainable aluminium.

### 2 Modelling

#### 2.1 Structure

Modeling of historic and current flows was built around Aluminium 'Product Net Shipments' statistical data provided by governments such as the US Geological Survey [3–5] or regional aluminum associations such as the European Aluminium Association, Australian Aluminum Council, the Japan Aluminium Association or the North American Aluminum Association [6]. The data was gathered starting in year 1950 into a comprehensive spreadsheet model by year, by region (European Union, South America, China, etc.), and per the following customer (market) segmentation:

- Building & Construction
- Transportation – Auto & Light Truck, Aerospace, and Other (Heavy Trucks, Trains, etc.)
- Packaging – Aluminium Containers and other Packaging (Foil, etc.)
- Machinery & Equipment
- Electrical – Cable and Other Electrical
- Consumer Durables
- Other (such as aluminum use for propellant or steel de-oxidation)

From Product Net Shipments, the model estimates both 'Internal' (runaround) aluminum facility recycle flows and 'New' (prompt, fabricator) customer recycle flow amounts based on estimation of average utilization, yield, and melt loss rates identified in the literature and reviewed and agreed upon by a sub-team of global aluminum technical experts.

**Table 1:** Example of global average worldwide collection (recycle) rates and melting recoveries by market

	Collection %		Melting Recovery %
	1990	2000	
Buildings	69	70	96
Autos & Light Trucks	75	75	96
Aerospace	76	75	96
Other Transport	76	75	96
Containers	61	59	85 (net of 4 cycles/yr)
Packaging – Foil	13	16	30
Machinery	40	44	96
Electrical Cable	45	51	96
Electrical Other	30	33	96
Consumer Durables	20	21	96

This sub-team of experts was commissioned by the IAI Global Aluminium Recycling Committee (GARC). 'Post Consumer' (end of product life) aluminum flows are estimated from Product Net Shipments in previous years, estimated product lifetimes (worldwide by market by year), scrap recollection rates (by region by market by year) and recovery factors again based on industry statistics, published literature, and review and agreement by the IAI GARC committee. An illustration of some of this data on scrap recovery rates and melting recovery efficiency is provided below in Table 1.

Modeling of future aluminium and resource flows are based on literature [7,8] and expert projections of life cycle inventory intensity rates [2,9] and aluminium product shipments by market (currently with a weighted average compounded annual growth rate of 2.5% per year.) The availability of recycle flows to meet these market demands are based on projected utilization, yield, melt loss, recovery rates, post-consumer recycling rates, and anticipated future product life-

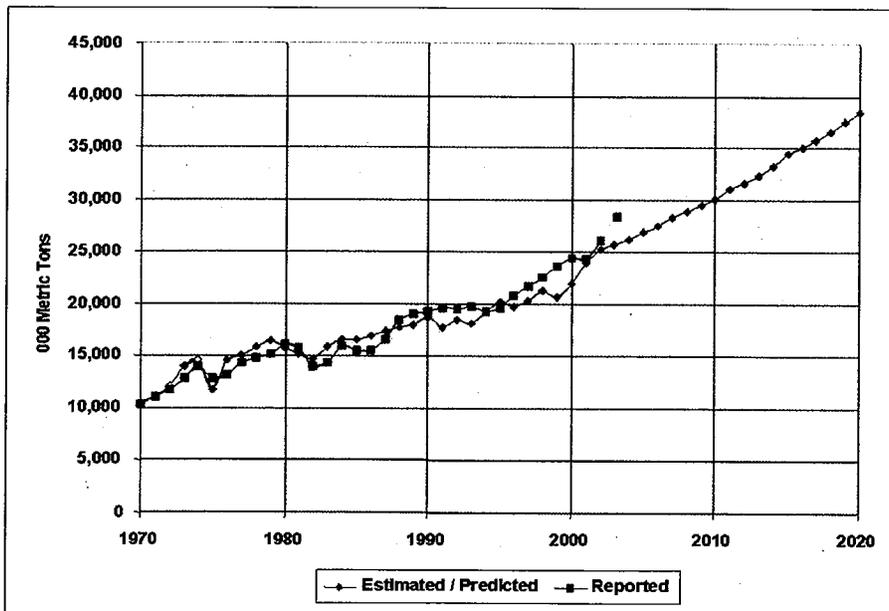
times. Primary aluminum production is then calculated to determine the market demand for additional primary capacity and resulting resource requirements.

**2.2 Validity checks**

There are two 'validity checks' in the model:

- 1) Comparison of estimated Post-Consumer & New Scrap by year with published values by year. (This check is informational since published values for global recycled metal are considered to be incomplete.)
- 2) Comparison of the estimated market demand for Primary aluminum by year with published primary production by year.

Fig. 1 shows the aluminum production that is estimated by the model to have been required for the years 1970 to 2003, based on Product Net Shipments less Post-Consumer and New recycle flows and system losses. This is shown to be in fairly good agreement with reported worldwide primary alu-



**Fig. 1:** Estimated vs. reported worldwide primary production

minum production for the years 1970 to 2003. Required primary aluminum production is then projected to the year 2020, with assumptions about each market segments growth rates, post-consumer scrap collection rates, and anticipated recoveries based on latest trends.

**3 Key Results**

The model's assessment of global aluminium mass flows is shown schematically in Fig. 2. The size (area) of the circles illustrates relative volume of flows. In year 2003, recovered post-consumer and new customer recycled metal supplied

33% of the global aluminium industry's product net shipment supply.

An estimated 516 million metrics tons of aluminium, about 73% of all of the aluminium ever produced, is contained in current transportation, cable, and building 'product inventory' (in service) as illustrated in Fig. 3. The model also projects future product inventories volumes by market segment to year 2020 also illustrated in Fig. 3.

Additional key results also included system losses such as aluminium packaging lost in landfills or metal oxidized to aluminium oxide when used as a propellant or for de-oxi-

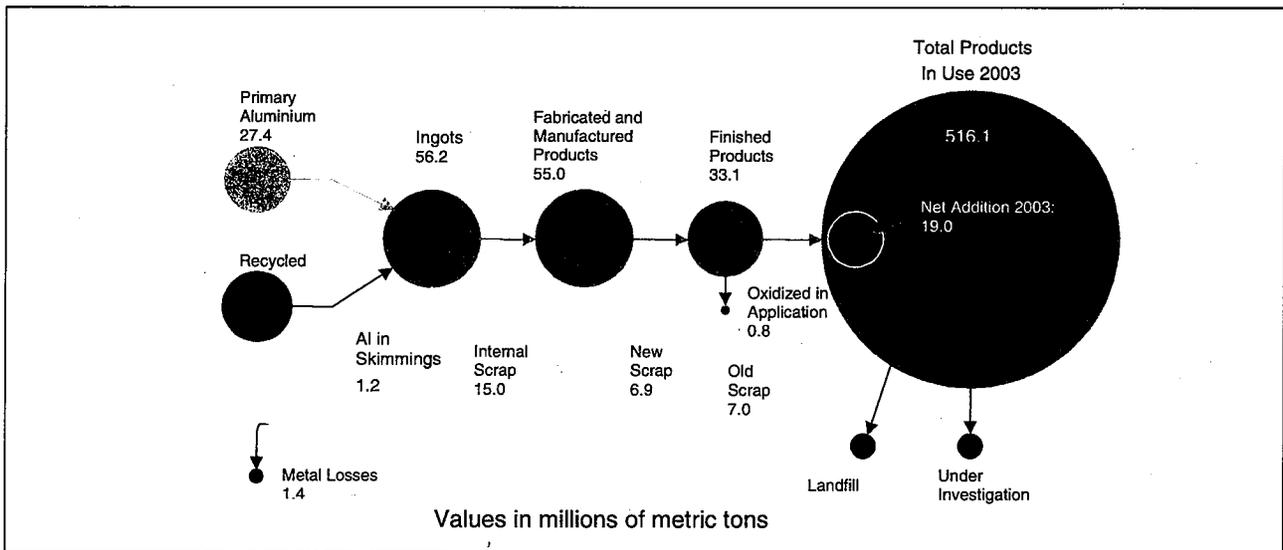


Fig. 2: Global aluminium mass flows for the year 2003

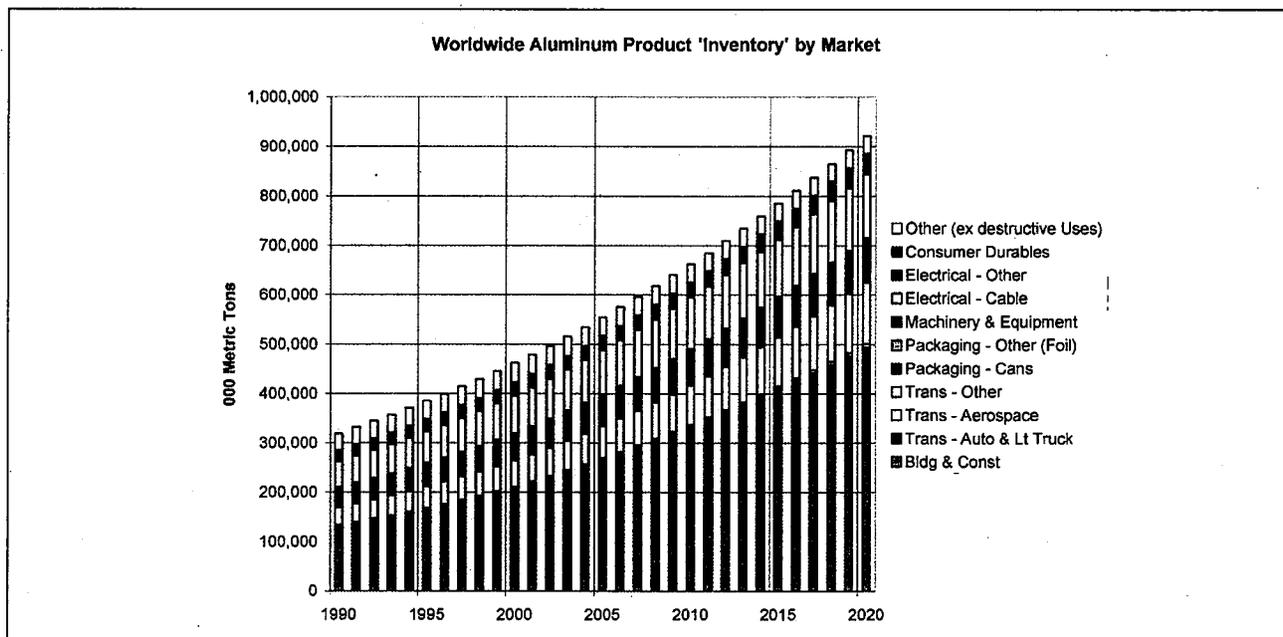


Fig. 3: Worldwide aluminum product 'inventory' by market

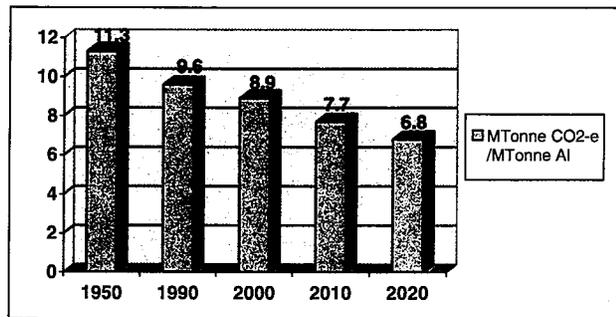


Fig 4: Greenhouse gas emissions intensity of aluminium shipments

dizing steel melts. The model also provides an assessment of past, current, and projected energy and emissions intensity of aluminium semi-fabricated shipments as illustrated in Fig. 4 based on the latest assessment of average greenhouse emissions intensity for aluminium processes [9].

On average, worldwide aluminum products are becoming less GHG intense on a per ton shipped basis due to two reasons:

- 1) Increase in the percent recycled metal relative to primary metal (only 5% of the energy and GHG emissions is required to produce aluminium ingot compared to primary (bauxite / Al<sub>2</sub>O<sub>3</sub> / electrolysis) aluminum, and
- 2) Lower emissions from primary aluminum facilities due to reductions in energy intensity and significant reductions in perfluorocarbon emissions.

#### 4 Outcomes

The results of the model were initially shared with the Board of Directors of the IAI in May 2004. (The Board is composed of CEOs and senior executives of the world's largest aluminium suppliers.) Model development, the GARC expert review and contribution, and results of global aluminium flow were described including a quantitative assessment of GHG emissions from global industry aluminium facilities today and projected into the future as a guide to the industry's contribution to climate change effects.

At that time, the Board requested a 'what if' case scenario that later indicated that industry factory and indirect emissions from purchased electricity could be stabilized despite significant industry growth by 2020 based on 1) currently projected recycled metal flows, and 2) moving all of the global industry toward today's (2003) global benchmark technologies and operating best practices. Furthermore, the model indicated that fuel efficiency and emissions savings due to additional aluminium transportation products had the potential to surpass the global industry's production emissions by 2020.

In May 2005, addition model results were shared with the IAI Board and they added the following voluntary objective to their list of Sustainable Development quantitative goals in recognition of the ecological and economic value of en-

hanced recycling to reduce natural resource consumption and life cycle inventory effects:

"The IAI has developed its Sustainability Material Flow Model to identify future recycling flows. The Model projects that global recycled metal supply (back to the industry) will double by 2020 from today's (2005) level of 6.4 million tonnes. The Aluminium Industry will report annually on its global recycling performance."

The IAI continues to develop and improve the model, collect supporting life cycle inventory intensity data, and utilize the scenario capability to quantitatively assess current and future production paths and sustainable strategies.

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October 22, 2007

## **Direct Greenhouse Gas Emissions Reduced Significantly Despite Growth in Primary Aluminium Production, New Life Cycle Inventory Report Confirms**

**London, UK (October 22, 2007) — The International Aluminium Institute reported today industry survey results showing a 14 percent reduction in total direct greenhouse gas emissions from the production processes of primary aluminium, including bauxite mining, alumina refining, anode production, aluminium smelting and casting, between 2000 and 2005, despite a 20 percent growth in primary aluminium production covered in the survey.**

The reduction since 2000 has been driven primarily by an impressive 56 percent reduction in perfluorocarbons (CF<sub>4</sub> and C<sub>2</sub>F<sub>6</sub>) per tonne of primary aluminium produced, combined with a 12 percent reduction in other direct emissions.

Furthermore, through energy efficiency improvements, the industry has reduced indirect emissions from electricity production by eight percent per tonne of aluminium produced. Overall, reductions of direct and indirect greenhouse gas emission have resulted in a decrease of two tonnes of CO<sub>2</sub> equivalents for every tonne of aluminium produced since 2000.

Over the same period, the production of aluminium from recycled products worldwide rose from 13 to 15 million tonnes per year, saving energy and avoiding greenhouse gas emissions while meeting the demands of modern society for strong, lightweight, safe and sustainable aluminium products. Recycling of aluminium products needs only 5% of the energy required for primary aluminium production.

The aluminium industry has taken a leadership role to establish a uniform global monitoring approach to greenhouse gas emissions reduction. The industry publishes the results of 13 sustainability indicators annually and a complete life cycle inventory report every five years. The latest Life Cycle Inventory is based on results from nearly three quarters of global primary aluminium production and the industry is working aggressively to increase the number of plants included in the survey.

Moreover the aluminium industry supports an approach to emissions reduction in which all stages of the life cycle are included. Hence, as well as reducing emissions from its own processes, the aluminium industry is also working with its supply chain partners and other stakeholders to maximize the life cycle benefits from aluminium's intrinsic qualities including its light weight, strength and recyclability. A recent life cycle study showed that automotive aluminium in passenger cars manufactured in 2006 will lead to potential global savings of approximately 140 million tons of CO<sub>2</sub> equivalent greenhouse gas emissions.

The full life cycle inventory report is available on the IAI website:  
<http://www.world-aluminium.org/Resources/Publications/Download>

*The IAI is the global forum of aluminium producers dedicated to the development and wider use of aluminium as a competitive and uniquely valuable material. The IAI in all its activities supports the concept that aluminium is a material that lends itself to improving world living standards and developing a better and sustainable world environment.*

*The IAI reflects the aluminium industry's wish to promote wider understanding of its activities and its responsibility of approach on questions of environmental protection, public health and safety in the workplace.*

**EXHIBIT C**

[Emissions Data – Excerpt from Alcoa’s website providing greenhouse gas and other emissions data, entitled “Emissions, Effluents & Waste – Performance Data”]



## Emissions, Effluents, & Waste— Performance Data

For a discussion on the performance reflected in the following data, please refer to the [Programs & Actions](#) section.

### Direct Greenhouse Gas Emissions

→ go

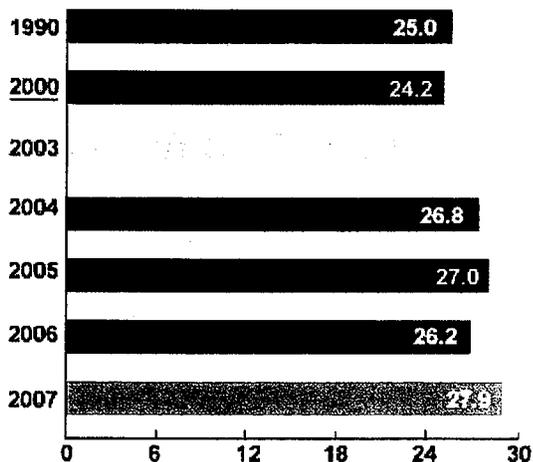
### Email Alerts

Sign up to get an email when Alcoa releases updated sustainability information.

→ go

### Indirect Greenhouse Gas Emissions Associated with Purchased Electricity

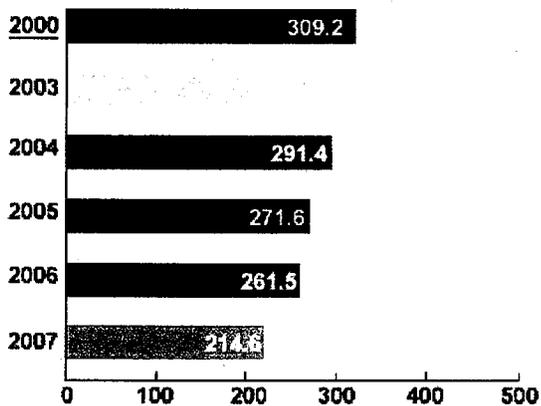
Million metric tons of CO<sub>2</sub>



Estimated indirect CO<sub>2</sub> emissions occurring at our purchased electricity supplier facilities. Indirect emissions generally track the amount of purchased electricity. In 2006, the reduction in emissions was due, in part, to the shutdown of our Eastalco smelter in Frederick, Maryland, USA.

### SO<sub>2</sub> Emissions

Thousands of metric tons

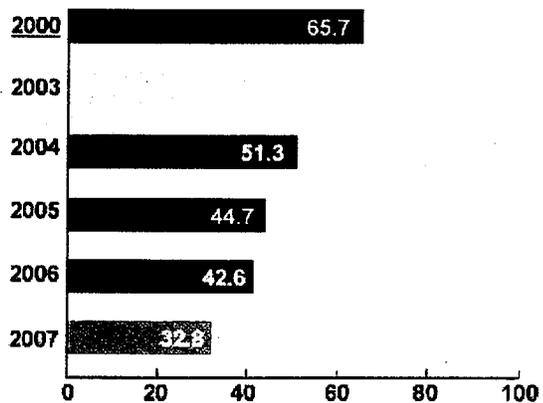


### SO<sub>2</sub> Emissions by Region

→ go

**NOx Emissions**

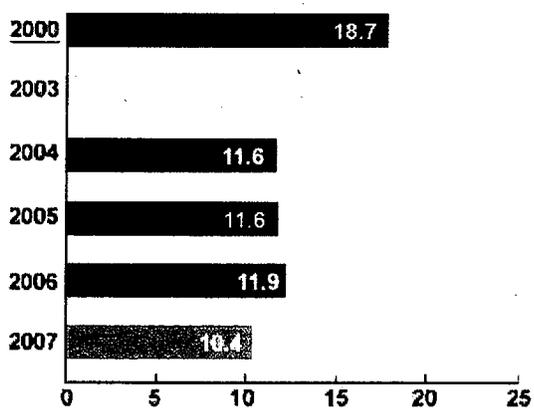
Thousands of metric tons

**NOx Emissions by Region**

→ go

**VOC Emissions**

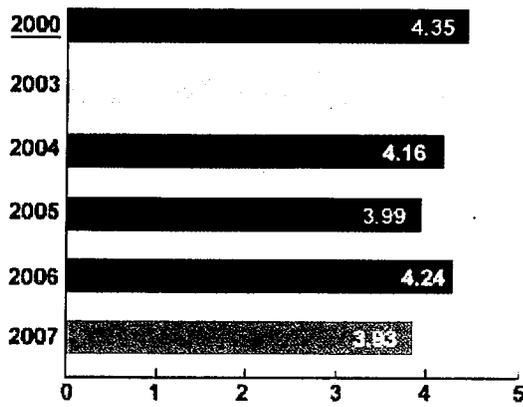
Thousands of metric tons

**VOC Emissions by Region**

→ go

**Mercury Emissions**

Thousands of kilograms



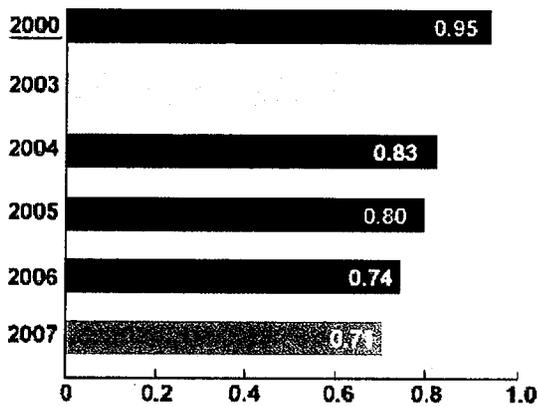
The fluctuation in mercury emissions is directly linked to variation in the amount of bauxite processed in our refineries.

**Mercury Emissions by Region**

→ go

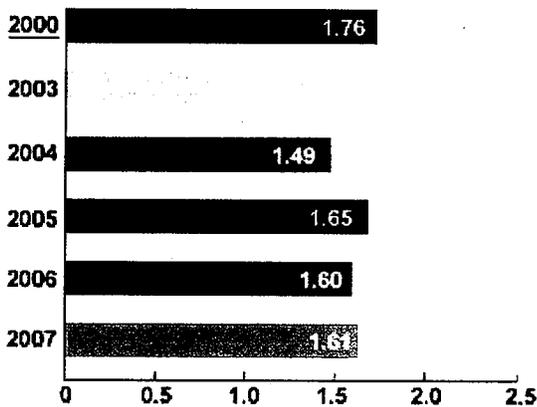
**Fluoride Emissions**

Kilograms per metric ton of aluminum produced



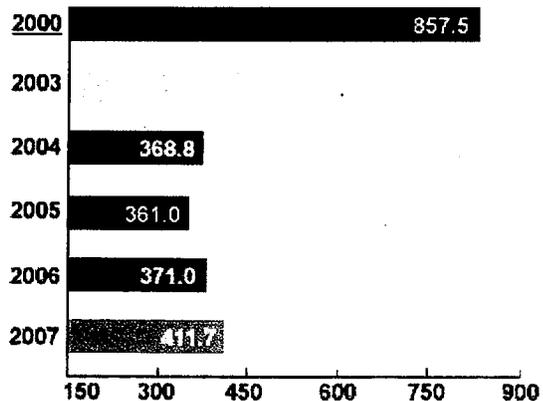
**Total Wastes Generated**

Millions of metric tons



**Total Wastes Landfilled**

Thousands of metric tons



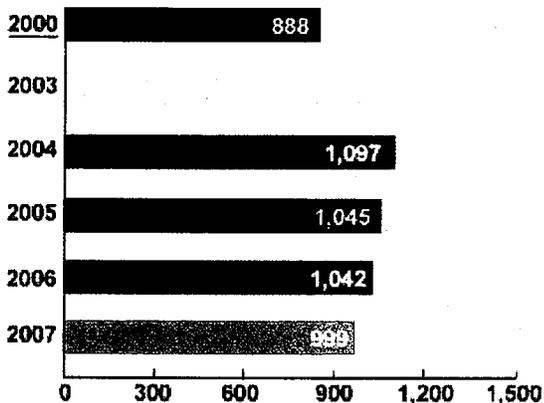
Does not include bauxite residue. Increase in 2007 is due to additional spent pot lining associated with potline demolition work and treated at our Gum Springs, Arkansas, facility, as well as some one-time wastes associated with expansion or process modification.

**Total Wastes Landfilled by Region**

→ go

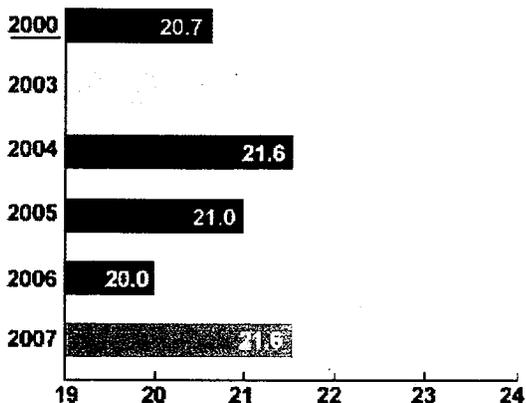
**Total Wastes Sold or Recycled**

Thousands of metric tons



**Spent Pot Lining Generated**

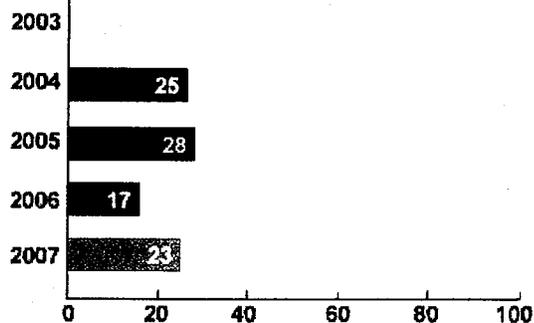
Kilograms per metric ton of aluminum produced



Alcoa's cell life continues to increase, resulting in fewer cell failures and fewer cells that need the lining removed and replaced. This pollution prevention effort reduces operating costs and will result in less spent pot lining for disposal.

### Spent Pot Lining Recycled/Reused

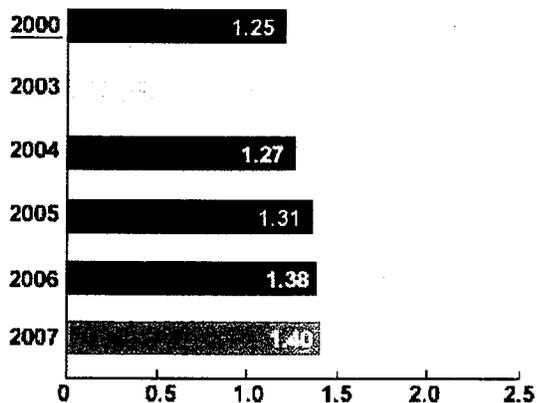
Percent



Decrease in 2006 due to the temporary suspension of some spent pot lining recycling.

### Bauxite Residue Generated

Tons per ton of alumina produced



### Environmental Incident Rate

→ go

**Direct Greenhouse Gas Emissions**  
(View of link from page 1)

	Direct Carbon Dioxide (CO <sub>2</sub> )	Perfluorocarbons (PFCs)	Sulfur Hexafluoride (SF <sub>6</sub> )	Total
1990	26.8	17.1	2.2	46.1
2000	29.4	7.8	1.1	38.8
	29.4	4.3	0.0	33.7
2004	30.0	3.7	0.0	33.7
2005	30.2	4.2	0.0	34.4
2006	30.2	3.7	0.0	33.9
2007	27.2	3.9	0.0	31.1

**EXHIBIT D**

[Alcoa's 2007 Sustainability Highlights Report, printed from Alcoa's website]



**2007  
Sustainability  
Highlights**

# Chairman's Statement

Integrating sustainability into our business strategy and deepening our stakeholder engagement strategies at the corporate, business unit, and project levels remained a key focus in 2007.

We built upon our engagement work in Iceland at a proposed smelter in Greenland. There, we have introduced a similar approach that enables us to document a community's concerns and expectations during the project feasibility phase. This allows us to integrate sustainability concepts at the earliest stage as part of our stakeholder engagement strategy, and this work will continue in 2008.

To help deepen our understanding of our stakeholders and our capacity to report on what is important to them, we established a pilot sustainability report review panel in 2007. The key message we received from panel members is that they want to know how we think. They are looking for assurances of a carefully considered thought process within our company that leads to the programs and actions we undertake. We have tried to do this in our 2007 reporting, and I thank the panel members for their gracious assistance.

We made other notable progress in our sustainability journey in 2007:

- Named one of the most sustainable corporations in the world for the third (2007) and fourth (2008) consecutive years at the World Economic Forum in Davos, Switzerland;
- As a founding member of the United States Climate Action Partnership, called on the U.S. government to quickly enact strong national legislation to achieve significant reductions of greenhouse gas emissions;

- Achieved further reductions in our greenhouse gas, sulfur dioxide, nitrogen oxide, and volatile organic compounds emissions from our operations;
- Posted annual revenues of US\$30.7 billion—an all-time record;
- Opened our first new smelter in two decades in eastern Iceland;
- Through Alcoa and Alcoa Foundation, invested more than US\$49 million in the communities in which we operate worldwide;
- Held our executive leadership team accountable for integrating diversity into our overall strategy and began tying the results to incentive compensation;
- Completed approximately 25 million hours of construction work in both northern and southern hemispheres with an international workforce of around 12,500 people with only one lost-time injury; and
- Ended the year with 80% of our locations having zero lost work-days and 47% with no recordable injuries.

While we made significant progress and earned prestigious accolades for our sustainability efforts in 2007, my greatest disappointment is that five employees and contractors suffered fatal injuries while working at our facilities.

Loss of life in the workplace is unacceptable, and our goal is to achieve zero fatalities. For this, we need investments, which we do every day; processes in control, which we strive for through our Alcoa Business System processes; and, more than anything, we need the involvement,



*Alain J. P. Belda*  
Chairman

passion, and commitment to do better from every leader, employee, and contractor.

Alcoa is at its best when we keep open lines of communication to all of our stakeholders, and respond decisively when they raise legitimate concerns. In 2007, we received some intense criticism for the management of our wire harness facilities in Honduras. While many of the accusations were unfounded, we took action on legitimate complaints and made significant changes to overall working conditions and compensation there. I'm very proud of the work our team did to acknowledge the issues, correct them, and underscore to our employees in Honduras that we value them and the community in which we operate.

We are interested in hearing what all of our stakeholders feel about our sustainability performance and reporting efforts—and how we can improve both. I strongly encourage you to send an email to [sustainability@alcoa.com](mailto:sustainability@alcoa.com) with your thoughts.

*Alain J. P. Belda*  
Chairman

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## Forward-Looking Statements

Certain statements in this report relate to future events and expectations and, as such, constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements also include those containing such words as “anticipates,” “believes,” “estimates,” “expects,” “hopes,” “targets,” “should,” “will,” “will likely result,” “forecast,” “outlook,” “projects,” or similar expressions. Such forward-looking statements involve known and unknown risks, uncertainties, and other factors that may cause actual results, performance, or achievements of Alcoa to be different from those expressed or implied in the forward-looking statements. Alcoa disclaims any intention or obligation, other than as required by law, to update or revise any

forward-looking statements. Some of the important factors that could cause actual results to differ materially from those in the forward-looking statements include: material adverse changes in economic or aluminum industry conditions generally, including global supply and demand conditions and prices for primary aluminum, alumina, and other products; material adverse changes in the markets served by Alcoa, including the transportation, building, construction, distribution, packaging, industrial gas turbine, and other markets; the company’s inability to mitigate impacts from rising energy and raw material costs, employee benefit costs, or other cost inflation; the company’s inability to achieve the level of cost savings, productivity improvements, or earnings or revenue growth anticipated by management; political and economic risks associated with foreign activi-

ties, including fluctuations in foreign currency exchange rates or changes in the laws or governmental regulations or policies in the countries in which Alcoa operates; significant legal proceedings or investigations or the disposition of current proceedings or investigations other than as anticipated by Alcoa’s management; adverse effects on Alcoa’s operations or markets or the global economy as a result of climate change and climate change regulations; significant costs and liabilities associated with numerous complex and increasingly stringent environmental laws and regulations; changes in Alcoa’s relationships with, or a significant downturn in the business or financial condition of, key customers or suppliers; and the other risk factors summarized in Alcoa’s Form 10-K for the year ended December 31, 2007 and other SEC reports.

# Sustainability Report Review Panel

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*In 2007, we used the services of the independent firm AccountAbility to convene and facilitate a pilot sustainability report review panel to help us identify gaps in our reporting and take an initial step toward incorporating third-party assurance into our process. The 11-member panel consisted of both external members and Alcoa representatives.*

*In the past, we have shared our draft report with select stakeholders, including the Interfaith Center on Corporate Responsibility, to solicit their feedback in an informal manner. We chose to pilot a more formal process this year and will determine if a permanent panel is necessary moving forward.*

*While this pilot panel did not provide assurance on our data, it did advise us on content. We could not address all of their suggestions in the 2007 reporting, but we are committed to exploring how to incorporate additional ones in future editions.*

*The following is the external panel members' independent commentary on our 2007 online reporting.*

## **Alcoa Stakeholder Panel Commentary**

### **The Panel**

The Panel's purpose is to advance the quality of Alcoa's sustainability reporting by offering comments during the drafting process, and providing a published Commentary on Alcoa's 2007 Sustainability Highlights Report, including recommendations for future reporting. The Commentary is not an audit or verification statement, but aims to provide guidance to Alcoa and its report readers.

The Panel met and held in-depth discussions with senior Alcoa executives, and appreciated the openness and high quality of the dialogue. We would note that many of the Panel's comments have been taken into account in the published report through: (a) adjustments to what and how issues have been covered; (b) Alcoa's commitments for future reporting; and (c) underlying policy changes.

The Panel expresses its views as a group of individuals, and not on behalf of these individuals' organizations. In recognition of members' investment of time, an honorarium was offered in addition to expenses being reimbursed, payable to the individual or to an organization of the members' choice. The Panel was designed, organized and facilitated by AccountAbility.

### **Our Opinion**

*The Report provides significant and useful disclosure as to how Alcoa understands, operationalizes and governs sustainability across its global operations.*

The Panel commends the increased disclosure about the company's internal decision-making and due-diligence processes. The process chart featuring key inputs and outcomes along the company's value-chain, and disclosure of executives' remuneration is particularly helpful. It would be useful to have further clarification of sustainability-related responsibilities from the Board level through to the Executive Committee, including whether and how remuneration includes incentives based on sustainability performance.

We welcome the inclusion of the company's engagement framework and reference to stakeholders within the decision-making section. We would encourage Alcoa to make greater use of appropriate case studies to exemplify how such processes work in practice across its diverse stakeholder universe.

With regard to public policy engagements, we appreciate the disclosure on key focus areas, political contributions and industry association activities. More thorough disclosure regarding engagement with local authorities would further improve the company's reporting.

*The Report covers many issues material to Alcoa's business and stakeholders, and though the breadth and depth of the coverage varies, there are visible improvements in this year's report.*

The Panel in particular commends Alcoa's coverage of, and linkages to its business strategy, which encompasses key sustainability aspects (such as the environment and community development). Enhanced disclosure this year also includes the identification of key risks and challenges across each impact area. Deeper reflections on how Alcoa's ambitious business growth strategy aligns with its sustainability vision and goals as well as the sector's prospective development would bring added value to reporting.

With regard to Climate Change, we welcome the frank discussions on the issue, and its identification by Alcoa as both its greatest opportunity and greatest challenge. Positive elements of Alcoa's reporting on climate issues include disclosure of specific short and long term GHG targets and performance against those targets; concise descriptions of the many internal and external initiatives to reduce emissions; and discussion of challenges in reducing emissions further. The report could be further improved through more thorough disclosure on two key issues—the recycling and recyclability of aluminum, and the use of renewable energy. We note that Alcoa does disclose targets and strategies around recycling, although renewable energy targets, if any, are not disclosed. We encourage further content on strategies for recycling and renewables, along with the broader implications progress in these areas.

The Panel welcomes the increased coverage of Human Rights throughout the report but would encourage Alcoa to more clearly outline its sphere of influence and so also its

scope of responsibilities along the value chain. Providing increased disclosure on, for example, unionization of suppliers and global benefit packages, noting similar disclosure for U.S. employees, would be appropriate. We also encourage Alcoa to demonstrate greater leadership in documenting and reporting its implementation of its commitments to respect human rights, thereby making a distinct and valuable contribution in the field of sustainability reporting matching its size, socio-economic impact and aspirations for excellence.

*The Report communicates Alcoa's commitment to improve its sustainability performance and related disclosure, providing targets and detailed performance metrics for most material issues.*

The Panel appreciates the presentation of data that allows for year-on-year comparison and encourages future reporting to continue to do this consistently in a manner that allows performance assessment both in absolute and relative terms.

More analysis and context would be important in order to provide more meaning to the data provided, including how different regions compare and how the company intends to achieve its targets. This should be supported by reference and comparison to external benchmarks as well as insights and outcomes from key stakeholder and business engagements, especially in high growth regions such as Asia. In particular, we urge Alcoa to provide an expanded discussion on data on its water use, including water management across its global operations.

The Panel notes the extensive range of case studies, and encourages Alcoa to provide additional context on broader sectoral or regional challenges and dilemmas within the report through the inclusion of more external voices. Having case studies focus on issues of global and/or local significance would further improve the report.

One notable gap is the report's limited coverage of Biodiversity. To allow the reader to assess the company's commitment to this area within its strategy, the Panel urges Alcoa to include clearly identified targets for Biodiversity and Ecosystem Conservation in its 2020 Sustainability Framework and report against such targets.

## Our Key Recommendations for Future Direction

- **Approach to Social Norms:** Further elaborate on Alcoa's approach to normative standards set by international bodies or voluntary standards and initiatives that are relevant to its sustainability performance, including related challenges and implications across different operational segments or subsidiaries.
- **Operationalization of Human Rights:** Use of indicators and case studies to illustrate practice, discuss dilemmas, and provide detailed disclosure of how Alcoa operationalizes its Labor & Human Rights commitments globally, especially in challenging developing country environments.
- **Human Rights and Economic Impact:** Enhanced reporting on the interface with the livelihoods of people, using Human Rights and Economic Impact indicators—region specific and applicable across the organization diverse regional operations.
- **Livelihood and Biodiversity:** Enhanced reporting on biodiversity conservation and its interface with the livelihoods of people who depend on ecosystems and thereby biodiversity, against clearly defined targets.
- **Cumulative Impact:** Greater disclosure on the work with peer companies and civil society organizations to understand the cumulative impact of their combined operations in a region, and how to mitigate environmental impacts at a sector/region/industry-wide level.
- **Climate Change Reporting:** Further integration of the company's climate change reporting across different formats, such as the responses to the Carbon Disclosure Project.
- **Sustainability and Financial Reporting:** More clearly show how Alcoa links sustainability measures and metrics to those it tracks for financial and operational performance, thereby further demonstrating its approach to integrating sustainability into core business strategy and execution.
- **Customer Relationships and Responsibility:** Going into greater depth about what its sustainability and climate change commitments mean for customer relationships and responsibility—considering both upstream and downstream implications.

### **Maria Emilia Correa**

*Vice President of Social and Environmental Responsibility  
GrupoNueva*

### **Lily Donge**

*Manager of Environment and Climate Change  
Calvert Asset Management Company*

### **Heather Grady**

*Director, Policy and Partnerships  
Realizing Rights: The Ethical Globalization Initiative*

### **Jean-Paul Jeanrenaud**

*Head, Business and Industry Relations  
World Wildlife Fund*

### **Mohammad Rafiq**

*Head of the Business and Biodiversity Programme,  
Global Programme  
International Union for Conservation of Nature (IUCN)*

### **Truman Semans**

*Principal, GreenOrder  
and  
Director for Markets and Business Strategy and USCAP Executive Committee Member, Pew Center on Global Climate Change.*

The panel members from Alcoa, who did not participate in writing the commentary, were:

- **Donna Dabney**  
*Corporate Secretary and  
Corporate Governance Counsel  
and Vice President, Alcoa;*
- **Rudi Huber**  
*President of Alcoa European Region  
and Vice President, Alcoa;*
- **Anita Roper**  
*Director of Sustainability; and*
- **Jake Siewert**  
*Vice President of Environment,  
Health & Safety and Public Strategy.*

# Profile

## Reporting Profile

To give stakeholders access to more detailed and current information on our sustainability performance, we offer online reporting ([www.alcoa.com/sustainability](http://www.alcoa.com/sustainability)) supplemented by this year-end highlights document to both demonstrate how sustainability is being integrated into all aspects of our business and drive best practices throughout our company. The more extensive information and data contained in our online reporting is updated throughout the year, making our sustainability reporting more relevant and timely.

More than 20 of Alcoa's top leaders and many other employees in the various regions are involved in our sustainability reporting, from writing individual sections to providing input and feedback. In addition, the report is reviewed by our chairman, chief executive officer, and Executive Council.

The information in this 2007 highlights document is for Alcoa's global operations during the period January 1 through December 31, 2007, unless otherwise noted.

Sustainability reporting is one part of our commitment to reporting. It should be read in conjunction with Alcoa's 2007 Annual Report, Form 10-K for the year ended December 31, 2007, Alcoa's other SEC filings, and other information contained on [www.alcoa.com](http://www.alcoa.com) to gain a broader perspective of our environmental, social, and economic performance.

## Organizational Profile

Active in all major aspects of the aluminum industry, Alcoa is the world leader in the production and management of primary aluminum, fabricated aluminum, and alumina combined. We serve the aerospace, automotive, packaging, building and construction, commercial transportation, and industrial markets, bringing design, engineering,

production, and other capabilities of our businesses as a single solution to customers.

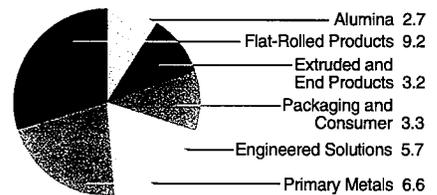
In addition to aluminum products and components, we also make aerospace and commercial fastening systems, precision castings, and electrical distribution systems for cars and trucks.

### Alcoa At-A-Glance 2007

Total Revenues.....	US\$30.7 billion
Number of Employees .....	107,000
Countries with Operations .....	44
Combined Alcoa, Alcoa Foundation Giving.....	US\$49 million

*Following the sale of Alcoa's packaging and consumer businesses in early 2008, the number of employees declined to 97,000 in 34 countries.*

### 2007 Third-Party Revenues by Segment (billions of US dollars)

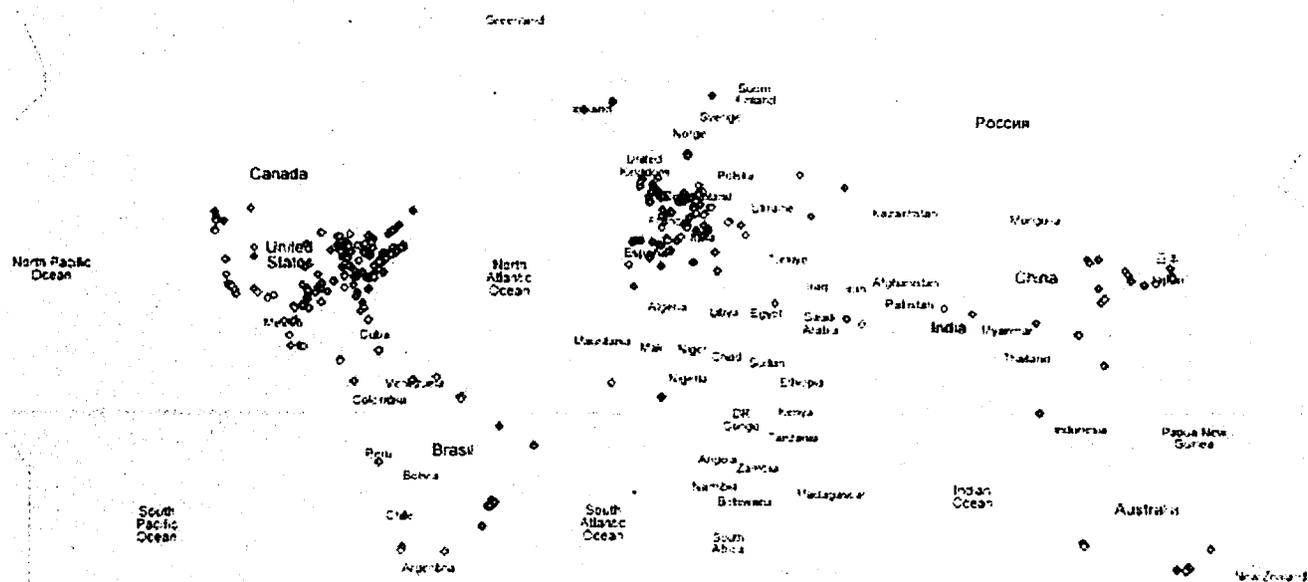


*Alcoa's packaging and consumer businesses were sold in early 2008.*



*In June 2007, Alcoa officially opened Fjarðaál ("aluminum of the fjords"), an aluminum smelter at Reydarfjordur in eastern Iceland. This project is Alcoa's first new primary aluminum facility in 20 years and the most modern and technologically advanced smelter in the world.*

Alcoa Locations Worldwide



- Location Categories**
- ◆ Bauxite, Alumina, and Chemicals
  - ◆ Primary Aluminum
  - ◆ Fabricated Aluminum Products
  - Packaging and Consumer Products
  - ◆ Castings and Related Products
  - ◇ Related Products
  - ◆ Technical Center
  - ◆ Corporate

Represents 2007 locations.  
 A complete listing of current locations is available at [www.alcoa.com](http://www.alcoa.com).

# Vision & Strategy

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

Supporting that vision are our values and principles and a business strategy that integrates our sustainability approach, which includes our 2020 Strategic Framework for Sustainability, and builds upon opportunities in our various markets.

## Market Outlook

Total world consumption for aluminum grew by 10% in 2007, and demand is expected to double by 2020 from the year 2005. The vast majority of this growth will be in China, but there will be significant growth in India, the Commonwealth of Independent States (which includes Russia), the Middle East, and Latin America. Our internal analysis anticipates that 2008 growth will follow this trend.

## Business Strategy

For 2008 and beyond, we have focused our business strategy on achieving the following in a sustainable and reliable manner:

- Continue to improve margins through productivity and value-added products;
- Add to and take advantage of our world-class bauxite and alumina positions and continue to secure low-cost, stranded power;
- Invest in opportune growth projects, such as manufacturing facilities in China and other parts of Asia, and the bauxite reserves and associated refinery and hydroelectric projects in Brazil;

- Evaluate upstream opportunities in Greenland, Iceland, Vietnam, China, and the Middle East;
- Re-power our existing smelters, as success in this area will generate significant shareholder value with lower capital intensity than building greenfield smelters, especially considering today's construction costs;
- Deliver new products and applications to rapidly expanding common end markets through innovative and proprietary technology solutions, unique equipment, and complex processes;
- Execute a balanced approach to capital management;
- Conduct business in an ethical manner and obey all laws and regulations;
- Enhance the economic and social well-being of the communities in which we operate; and
- Operate worldwide in a manner that minimizes effects on natural habitats and biological resources.

## Major Challenges

There are a number of challenges that face our company as we seek to expand our operations and more fully integrate sustainability into our business. Major ones include the following:

- Eliminating fatalities from our workplace;
- Finding low-cost, reliable energy sources;
- Maintaining our 25% reduction in greenhouse gas emissions while increasing production;
- Reducing our freshwater consumption and mercury emissions to achieve our short- and long-term goals; and

- Attracting and retaining top talent in an increasingly competitive labor market.

## Risk Assessment

A complete discussion of the risks Alcoa faces can be found in Form 10-K for the year ended December 31, 2007. Some major risks include the following:

- Material adverse changes in aluminum industry or economic conditions generally or in the markets served by Alcoa;
- Cyclical nature of the industry, with prices subject to worldwide supply and demand;
- Rising energy costs or interrupted or unavailable energy supplies;
- Increase in the cost of raw materials;
- Union disputes and other employee relations issues;
- Fluctuations in foreign currency exchange rates and interest rates;
- Significant legal proceedings or investigations or the disposition of current proceedings or investigations other than as anticipated by Alcoa's management;
- Adverse effects on Alcoa's operations or markets or the global economy as a result of climate change or climate change regulations;
- Significant costs and liabilities associated with numerous complex and increasingly stringent environmental laws and regulations;

- Changes in the business or financial condition of a significant customer or customers; and
- Changes in the laws or governmental policies in the countries in which Alcoa operates.

Please refer to the online reporting for ways in which we are mitigating these risks.

### Decision-Making Processes

Alcoa has a decentralized structure, with many of the day-to-day business decisions made within the various business units and regions. Ultimately, all key strategic decisions must be approved by the Board of Directors. Others may require Executive Council approval.

Supporting this structure are a number of decision-making processes at the corporate and business-unit levels. These include those for capital investments, new facilities, operational activities, policies, and acquisitions and divestitures.

### Measuring Success

We have a long history of using metrics as a means to drive change within the company. One of the most visible and effective drivers is our 2020 Strategic Framework for Sustainability, which helps guide our businesses and measure our progress toward our vision for 2020.

Supporting that framework is a variety of systems and processes that collect data from our global operations and make them available to those who need the information to evaluate performance and drive continuous improvement.

For example, we initiated a process in 1988 to collect and display current, detailed information on safety in a way that would be available to all employees who need the informa-



**Jiaming Wu**  
Utility Worker  
Alcoa Kunshan Aluminum  
Products, China

*“The only way to realize a balance between a plant and its surrounding environment is through efficient allocation of resources for our future generations.”*

tion to evaluate performance and drive continuous improvement. We have expanded the original data system to include incident management, and we now use the system for all environmental, health, and safety data collection, incident management, and reporting.

### Stakeholder Engagement

Alcoa does not exist in a vacuum. We are the source of economic, social, and environmental effects not only in the workplace but also externally. In turn, we are affected by the demands and actions of our customers, employees, shareholders, suppliers, neighbors, various levels of government and government agencies, the communities in which we operate, and others.

In today’s language, if groups or individuals knowingly or unknowingly have a relationship with us, they are known as stakeholders. They all exist and function within complex formal or informal relation-

ships and have the capacity to affect the activities associated with our operations.

In 2007, we continued to develop our internal and external stakeholder engagement processes with the Iceland Sustainability Initiative serving as a model in our training programs and with our community advisory boards throughout the world. The emphasis is on seeking earlier input from our stakeholders in the communities where we operate—not just for our growth projects, but also for existing plant upgrades, expansions, and ongoing activities.

While the issues raised by stakeholders vary from community to community, there are some common themes. These include job creation, investment in the community, and the impact of Alcoa’s operations on the environment and community health.

### Industry Leadership

As a leader in the aluminum industry, we believe it is our responsibility to help shape the direction of the industry to ensure it is continually improving and moving toward a more sustainable future.

One of the ways we do this is to be a major participant in industry associations and organizations. We go beyond just paying membership dues to having our company’s senior leaders and experts serve as officers, committee members, and information resources.

We also take a leadership position on major issues facing our industry, such as climate change. Not only are we a founding member of the U.S. Climate Action Partnership, we also are a charter member of the World Resources Institute Green Power Market Development Group.

## Our Greatest Sustainability Challenge

Climate change is clearly a global challenge, and it is our key sustainability issue as a company.

While characteristics of aluminum and aluminum products have a significant role in reducing greenhouse gas (GHG) emissions, the production of primary aluminum results in GHG emissions.

In 1998, we established a Climate Change Strategy Team that developed and promoted our position on climate change, including our target of reducing GHG emissions by 25% below 1990 levels by 2010. We achieved that goal in 2003, despite our continuous growth. In 2007, we achieved further reductions in direct emissions linked to our closure of three lignite-based power units in Rockdale, Texas, USA, bringing our total reduction to 33% from 1990 levels.

The key elements of our climate change framework are:

- Continuing to reduce our GHG footprint by pursuing transformational production technology, energy efficiency, and renewable sources of power;
- Increasing the promotion of recycling to return more metal into the market with substantially lower energy requirements;
- Taking a leadership position on public policy to promote GHG-reducing actions in a timely but sensible fashion;

- Incorporating carbon risk into business planning models (mergers, acquisitions, and capital investments);
- Incorporating climate change into our new product strategy by emphasizing positive GHG impacts in markets, such as transportation, building construction, and renewable energy delivery; and
- Engaging our employees, their families and members of our communities through programs, such as the Alcoa Foundation-funded Make an Impact program in Australia, that educate and provide tools to reduce an individual's GHG footprint. In 2008, the Make an Impact program will be rolled out across many North American locations.

We continue to pursue the development of GHG-free inert-anode aluminum smelting, although there remain technical and cost targets to overcome. We're using biodiesel, an alternative fuel consisting of diesel and 20% soybean oil or other non-petroleum ingredients, to power mobile equipment at our plants.

We are actively partnering with external stakeholders on the issue of climate change. In early 2007, we joined nine highly esteemed U.S.-based companies and four leading environmental organizations to call on the U.S. government to quickly enact strong national legislation to achieve significant reductions of greenhouse gas emissions. The partners formed an unprecedented alliance called the U.S. Climate Action Partnership (USCAP) to send a clear signal to lawmakers that legislative action is urgently needed.

We are a member of the business leadership team for the Pew Center on Global Climate Change, the

World Resources Institute Green Power Market Development Group (charter member), the Brazilian Business Council for Sustainable Development, the Global Roundtable on Climate Change, and the World Economic Forum Global GHG Registry. We are also actively involved in the development of GHG accounting standards in conjunction with the International Aluminium Institute, International Standards Organization, and the Intergovernmental Panel on Climate Change.

In late 2007, we became a founding reporter of the Climate Registry, agreeing to report GHG emissions individually from all of our large facilities in the United States by the year 2010. We have also participated in all six surveys performed by the Carbon Disclosure Project—a not-for-profit organization supporting institutional investors who seek to better understand climate-related risks and opportunities from the world's largest companies. We have routinely ranked among the highest ratings within the metals and mining industry in this survey.

Supporting this work is Alcoa Foundation, which has increased its investment in climate change initiatives (see page 26).

# Sustainability Approach



At Alcoa, sustainability is defined as using our values to build financial success, environmental excellence, and social responsibility through partnerships in order to deliver net long-term benefits to our shareowners, employees, customers, suppliers, and the communities in which we operate.

Our commitment to sustainability has a long history and is evident every day—from the way we live our values to our strategic framework for sustainability supported by clear targets for measuring progress toward achievement of our vision for 2020. We believe that addressing sustainability will make us a better company, and a better company becomes a company of choice for governments and communities. This designation leads to better access to land, markets, capital, resources, and people.

Our goal is to integrate sustainability concepts into our processes so they become part of how we do business. Key components to achieving this goal are understanding the expectations of our stakeholders and remaining transparent in reporting our progress.

We have developed a corporate approach to sustainability and continued to integrate that into our overall business strategy in 2007. Due to the decentralized nature of Alcoa, implementation primarily occurs at the local level in accordance with our 2020 Strategic Framework for Sustainability.

Many of our business units are using complementary sustainability indicators around their sustainability challenges. They are also using workshops and other methods to engage

customers, management, employees, communities, and other stakeholders in sustainability initiatives, leading to strategies and action plans.

For example, the board of directors and regional president of our Brazilian operations established the Brazilian Sustainability Steering Committee in December 2007. The committee's main objectives are to improve sustainability governance with the involvement and visibility of top management; increase accountability of business units and locations; create opportunities for leaders to share best practices while increasing their knowledge on sustainability; and accelerate the process of integrating sustainability into the organization.

In Europe, a sustainability director appointed in 2007 will work with all the business units and countries in Europe to more fully integrate sustainability into their day-to-day activities.

Other key sustainability initiatives in 2007 included the following:

- Formation of a pilot sustainability report review panel to help us identify gaps in our reporting and take an initial step toward incorporating third-party assurance into our process;
- Development of an ethics and compliance Leaders' Guide for all global employees who are in a position to supervise others in the organization;



**Rosana de Oliveira**  
Extrusion Assistant  
Utinga, Brazil

*"Sustainability is being concerned about the quality of life in society and the unconditional preservation of nature."*

- Development of a diversity performance initiative aligned with our corporate diversity strategy and inclusion by each business unit;
- Announcement of a goal to increase the North American used beverage can recycling rate to 75% by 2015; and
- Creation of the Health Impact Assessment process for new projects and expansions.

We were recognized for these and other efforts through inclusion in the Dow Jones Sustainability Index for the sixth time and being named one of the most sustainable companies in the world at the World Economic Forum in Davos, Switzerland, for the third (2007) and fourth (2008) years in a row.

## 2020 Framework

Developed in 2000 by an internal worldwide team that analyzed environmental and social trends since 1990 and looked 20 years into the future, Alcoa's 2020 Strategic Framework for Sustainability has since evolved into a comprehensive roadmap for our businesses and locations to integrate all aspects of sustainability into their day-to-day operations.

## Case Study

### Employment Program Brings Security to Guinea Communities

Employing local citizens to assist with security at a proposed refinery site in Guinea is, in turn, helping secure a sustainable future for not only these employees but their extended families and the communities in which they live.

Alcoa and its project partner Rio Tinto Alcan are studying the feasibility of building a refinery in the country's Boké region, where people have few of the opportunities provided in the developed world.

In addition, the region is suffering rural exodus, with young people leaving their communities to seek jobs in cities around the country.

To supplement the professional security guards from *Entreprise Generale de Batiments (EGB)* protecting the proposed site and the surrounding buffer zone, Alcoa and Rio Tinto Alcan asked the chiefs and elders of the five potentially affected communities to select—on a pro-rated basis based on population—40 people to serve as security watchmen and two chiefs to serve as their supervisors. The communities were given basic guidelines regarding job requirements and asked to implement a fair selection process.



*Community meeting to discuss the watchmen program*

"The watchmen program is very important to the life of our communities, and it has changed many things," said Aly Bangoura, chief of Kabata. "The relationship between our communities has been reinforced. Since the program started, our children and communities are very respectful and listening to the chiefs more than in the past. We are also able to solve certain problems, such as feeding and clothing our families."

The selected watchmen underwent two days of training on the project partners' visions and values and the roles and responsibilities of a watchman. Each is paired with a professional security guard, providing administrative and other assistance as needed. The watchmen have no powers of arrest, and they do not carry any weapons. However, they are learning skills that may enable them to enter into the professional security field, which is one of the largest employers in Guinea.

"Being a watchman has had a positive impact on me," said Sekou Mansare, who lives in Dougoula. "It allows me to be a salaried employee and to save some money. It allows me to be at the service of my community, and it gives me hope for a better future."

According to Chief Bangoura, "Since the installment of the security guards and the watchmen, our community has lived in peace since theft and unemployment are greatly reduced."

Mamady Camara, assistant to the EGB supervisor on the project, adds, "Since the deployment of the community security guards in the project zone, everything is going nicely and we are not encountering any problems at all. We congratulate Alcoa and Rio Tinto Alcan for this initiative."

The framework is built around six focus areas and includes long-term targets and short- and long-term metrics for each that were agreed upon with the business leaders and technical experts throughout the company. These targets are very aggressive and are designed to stretch the organization to think differently to drive optimum performance, as opposed to conservative objectives that we

would be fairly certain we would meet. Accordingly, we may fall short of some of these goals, but we will be transparent about reporting such shortfalls as well as what we hope to do to continue on the path.

The framework and enhancements to the data-collection systems allow us to focus employee attention on sustainability, make everyone aware of the importance of the issues, and demonstrate management commitment to getting the job done right. It also helps employees do the right things by clearly stating what these "things" are and how best to go about doing them.

	Target	Metric	Progress Achieved Through Year-End 2007
<b>Economic Benefit</b>	<b>1</b> Maintain a strong balance sheet	Debt-to-total capitalization consistently between 30% and 35%	30.2%
<b>Respect &amp; Protect People: Employees</b>	<b>2</b> Elimination of occupational illnesses and injuries	Zero fatalities	Five fatalities
		Zero lost workday rate	0.12 lost workday incident rate
		Zero total recordable injuries	1.35 total recordable incident rate
		From base year 2006, achieve at least a 20% reduction in the number of employees requiring protective measures against unacceptable noise levels by 2008	12%
	From base year 2006, achieve at least a 20% reduction in the number of employees requiring protective measures against unacceptable work-place exposure to chemicals by 2008	15%	
<b>3</b> Culture of health	Number of employees participating in culture of health initiatives	97% of established locations had health promotion activities (We currently do not aggregate employee participation data at the corporate level.)	
<b>4</b> Ensure a workforce that reflects the diversity of the communities everywhere we operate	By 2010, the following representation at Alcoa's management level: Global women: 18% U.S. minority: 15%	Global women: 14.6% U.S. minority: 12.8%	
<b>5</b> Increase workforce performance	100% of salaried employees receiving annual performance feedback by 2006	Approximately 85%	
<b>Respect &amp; Protect People: Communities</b>	<b>6</b> All Alcoa operations understand the communities in which they operate	100% of manufacturing locations will implement the Alcoa Community Framework by 2010	90% of worldwide operating locations had established community programs
	<b>7</b> Contribute to healthier, safer, and more sustainable communities everywhere we operate	40% of employees within a business unit or region volunteered in the community through ACTION, Bravo!, or Month of Service	ACTION: 7.73% Bravo!: 8.54% Month of Service: 15.99%

	Target	Metric	Progress Achieved Through Year-End 2007
<b>Safe &amp; Sustainable Products &amp; Processes</b>	<b>8</b> Increase recycling of aluminum	25% recycled aluminum content in fabricated products by 2010; 50% by 2020	Ratio of purchased scrap to total fabricated product shipments was 30%. However, the total amount of recycled metal in our products is somewhat lower since a portion of the purchased scrap would have been included in primary ingot sold to third parties.
		Increase the North American used beverage can recycling rate to 75% by 2015	52%
<b>Meet the Needs of Current and Future Generations through Efficient Resource Use</b>	<b>9</b> Improve resource use to reduce environmental "footprint"	From base year 2005: 10% reduction in selected material use by 2010 • 2006: Collect data • 2007: Commence reporting	Businesses have worked to identify major raw materials for which a reduction target could be considered.
		From base year 2000: 50% reduction in landfill waste by 2007; 75% reduction by 2010; 100% reduction by 2015	52%
		Reduce energy intensity by 10% by 2010	We are pursuing several production transformation projects that, if successful, will allow us to achieve this goal.
		60% reduction in process water by 2009; 70% by 2010	26%
		From base year 1990: 25% reduction in greenhouse gas emissions by 2010. Assuming success with the inert anode technology, a 50% reduction by 2010	33%
<b>10</b> Practice cleaner production to reduce environmental emissions/impacts	From base year 2000: 60% reduction in sulfur dioxide (SO <sub>2</sub> ) by 2010	31%	
	50% reduction in volatile organic compounds (VOCs) by 2008; 60% reduction by 2010	44%	

	Target	Metric	Progress Achieved Through Year-End 2007
<b>Meet the Needs of Current and Future Generations through Efficient Resource Use</b> <i>(continued)</i>	10	Practice cleaner production to reduce environmental emissions/impacts	30% reduction in nitrogen oxides (NO <sub>x</sub> ) by 2007; 50% reduction by 2010; 85% reduction by 2015
			80% reduction in mercury emissions by 2008; 90% reduction by 2010; 95% reduction by 2015
			Zero process water discharge by 2020
			50%
			10%
			Initial efforts to control process water are being managed through the process water reduction target.
<b>Accountability &amp; Governance</b>	11	High audit performance	No material weaknesses in the design or operation of internal controls over financial reporting, which are reasonably likely to adversely affect Alcoa's ability to record, process, summarize, and report financial information
	12	Ethics and compliance	Resolution of 90% of cases reported on the Compliance Line within 12 working days by 2009
			Alcoa continued to meet the goal of no material weaknesses in the design or operation of internal controls over financial reporting.
			Employee relations calls, including those involving payroll or benefit determination issues, were resolved within 12 working days 62% of the time in 2007. Calls concerning more substantive issues require significantly more time for proper resolution. As such, this metric will be reevaluated in 2008.

Providing this clear measurement of our progress both internally and externally will lead to stronger tactical planning for businesses through an integrated approach.

# Corporate Governance



Alcoa is a values-based company. Our values guide our behavior at every level and apply across the company on a global basis. We expect all directors, officers, and employees to conduct business in compliance with our Business Conduct Policies, and we survey compliance with these policies on an annual basis.

## Ethics & Compliance

In an effort to continuously improve the effectiveness of our Ethics and Compliance Program, we implemented several new initiatives in 2007 that support and enhance our current processes.

The first initiative was to develop and publish a Leaders' Guide for all global employees who are in a position to supervise others in the organization. While approximately 156,000 copies of the guide were distributed in 19 languages to all global leaders, its real focus was directed toward mid-level managers, supervisors, superintendents, and employee team leaders. The intent was to reach both hourly and salary employees with this effort.

The second initiative was the development and implementation of an exit interview process that incorporates several ethics and compliance-related questions. The impetus behind this initiative is the belief that the ethical climate of Alcoa, as well as any specific code of conduct infractions, can be gauged to some degree through the exit interview process.

Another significant step in the maturation of our ethics and compliance process was the development of effec-

tiveness metrics that help provide an objective assessment of the impact of our ethics and compliance program on our organization. Historically, we have maintained activity metrics, which only measure the degree to which we have deployed our ethics and compliance tools and the extent to which they are utilized.

The Ethics & Compliance Line program illustrates the difference between the two types of measures. While we measure activity (i.e., call volumes, types of calls, regional activity, accuracy of the service provided, etc.), these metrics alone do not indicate the value the line is providing to both Alcoa and our employees. To gauge effectiveness, calls into the line are analyzed on multiple effectiveness metrics, including the percentage of calls that are anonymous and the ratio of inquiries versus allegations of wrongdoing.

## Key Challenge

### Corruption

**Goal:** Zero violations of Alcoa's anti-corruption policies.

**Challenge:** Alcoa is entering or expanding operations in regions of the world known to be prone to a high degree of corruption, as validated by several international corruption rating agencies. The challenge is to ensure Alcoa employees understand and abide by our policy of zero tolerance for bribery and other corrupt activities. Breaking this policy could result in damage to Alcoa's reputation, legal sanctions, and significant costs.

**Geographical Differences:** What is considered corrupt in one country may be an accepted form of doing business in another. For example, people in some cultures view bribery as an accepted means of taking care of family responsibilities. In reality, bribery often violates the laws of their country.

## Human Rights

Alcoa is a global enterprise that does business in many dynamic markets. We rely on our culture in the first instance—Alcoa employees living Alcoa's values—to ensure that we conduct business in a way that respects human rights.

We respect all national laws and international human rights norms. The values and principles that underpin these laws and norms inform and guide our own policy and behavior. While the primary responsibility for human rights lies with the various governments, we are committed to helping them avoid human rights violations.

Within our own operations, we strive to maintain high standards in the human rights area despite operating in many diverse locations. To achieve this, we apply human rights to every-

**Strategy/Key Actions:** Employees of Alcoa must abide by the company's policies, one of which specifically states Alcoa will be in compliance with all laws and regulations. Actions to bring a higher degree of vigilance to ensure compliance include:

- Training on anti-corruption;
- Anti-corruption certificates for agents, distributors, and representatives that assert these individuals and companies understand Alcoa's policies and attest their willingness to abide by those policies;
- Increased audits and risk assessment;
- A compliance hotline that can be used to report any suspect business practices; and
- Appropriate disciplinary actions when infractions are discovered.

thing we do. For example, we have a robust program focused on diversity and inclusion, and we hold our senior management accountable for championing and endorsing these initiatives.

One of our key challenges in the human rights area is ensuring this policy is integrated into the values system throughout our global operations. Ensuring compliance is difficult, but we have created numerous methods to identify noncompliance.

Our Human Rights Policy is available on our internal website in 21 languages and dialects. We also publicly post our policy on [alcoa.com](http://alcoa.com) so stakeholders worldwide can—and do—alert us to potential issues regarding this policy. Our internal systems also support compliance with this policy. For example, the Ethics & Compliance Line permits employees and external stakeholders to report policy violations on a confidential basis and in their own language.

Annually, we conduct a Business Conduct and Conflict of Interest Survey that requires certification of compliance with all business conduct (including applicable laws and regulations), anti-corruption, and conflict of interest policies. In the jurisdictions in which we employ a majority of our employees, there are laws applicable to most of the areas in our policy, including child labor, freedom of engagement, equality of opportunity, and compensation.

In developing our growth projects, we focus great attention on the needs of indigenous people and the engagement of stakeholders. We also have a rigorous internal audit system that includes, as part of a site visit, inter-

views with all key location managers on compliance with local laws. In 2008, we added a specific interview question regarding management compliance with our human rights policy.

Within our human resources area, we have a robust program focused on diversity and inclusion, and we hold our senior management accountable for championing and endorsing these initiatives.

### Assurance

We use a variety of means to incorporate assurance into our projects and processes worldwide, as well as our sustainability reporting. These include:

- Internal processes, such as auditing, annual employee surveys, robust metrics systems, and location health and safety committees;
- Programs and processes that involve external stakeholders, such as Securities and Exchange Commission filings, community advisory panels, environmental improvement plans, environmental and social impact assessments, and partnerships with other organizations;
- External awards and recognitions, many of which are bestowed after quite rigorous research and benchmarking processes by independent reviewers, such as the Dow Jones Sustainability Index;
- External standards that we use to guide our internal policies and standards;
- External principles that we subscribe to or endorse, such as The Business Roundtable Principles of Corporate Governance; and
- The sustainability report review panel (see page 2).

## Alcoa Values

### Integrity

Alcoa's foundation is our integrity. We are open, honest, and trustworthy in dealing with customers, suppliers, coworkers, 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 behaviors, actions, and results.

# Environment



Operating in a manner that protects and promotes the health and well-being of the environment is a core value to Alcoa.

Our environmental goals are aggressive; they are not intended to be easily achieved just for the sake of positive communications. They were developed to stimulate designing for the environment during process optimization and growth projects, which requires technical innovation and collaboration. While this approach is more difficult and costly, we believe it will allow us to manage the uncertainty of ever-changing environmental regulations and, more importantly, justify our being a company of choice for future growth opportunities around the world.

We continued to make good progress on several of our strategic targets in 2007, most notably the reduction of sulfur dioxide (SO<sub>2</sub>), nitrogen oxide (NO<sub>x</sub>), and volatile organic compounds (VOC) emissions from our operations. We are also pursuing some research and development projects that explore innovative and cost-effective applications that will hopefully drive even further reduction of these emissions.

Our major challenges remain the reduction of mercury emissions from our refineries and the reduction of



**Claudette Harris**  
Staff Systems Analyst  
Jamaico, Jamaica

*"Sustainability means using resources so that the environment is not depleted."*

## Key Challenge

### Water

**Goal:** From base year 2000, 60% reduction in process water by 2009; 70% by 2010.

**Challenge:** As we seek to grow around the world to meet the increasing demand for aluminum, we must be acutely aware of the growing concern regarding water quality and supply. Reducing the use of fresh-water in our operations will make more available to meet the needs of the communities in which we operate and also reduce the volume of wastewater we discharge.

**Geographical Differences:** In some parts of the world where we operate, such as Australia, the availability of water is a significant concern to community and government stakeholders. In others, we contend with excess water, such as stormwater runoff, that requires separate management strategies.

**Strategy/Key Actions:** In 2007, we completed a basic risk profile for our significant water use plants to allow us to prioritize future projects in regions where action is most needed.

Key actions to reduce our water usage include:

- Developing, evaluating, and deploying innovative and low-cost sustainable water management technologies and approaches;
- Using secondary sources of water, such as agricultural runoff and treated effluent;
- Increasing the use of water recovered or recycled from our processes; and
- Collaborating with other businesses and non-governmental organizations, such as the World Business Council for Sustainable Development, on best practice and technology sharing.

freshwater consumption. While we incrementally made progress on both of these targets in 2007, we continue to research innovative methods for achieving better results.

### Material Use & Recycling

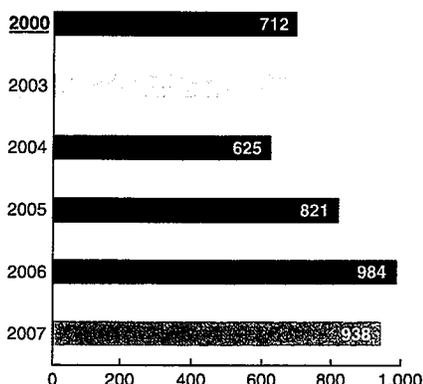
Alcoa is one of the largest and most fully integrated aluminum companies in the world, which means that we have the capabilities to extract raw materials, process them into aluminum, convert the metal into end-use products or make them available to others for further processing, and recycle aluminum products at the end of their useful life. We are aware of the importance of materials flow

throughout the economies of the world, and we recognize the need to make efficient use of all raw materials and natural assets.

Recycled metal from products like used beverage cans (UBCs), end-of-life vehicles, demolished buildings, and discarded consumer products continues to be an important source for our basic material, and its importance will keep growing. In 2007, we purchased and recycled 938,000 tons of aluminum scrap. This is slightly lower than the volume captured in 2006, primarily due to some availability issues in Europe.

In early 2008, we announced an aggressive goal to raise the UBC recycling rate in North America from its current 52% rate to 75% by 2015. To help us achieve this goal, we created the position of director of corporate metal recycling strategy in 2007.

**Aluminum Metal Recovered by Alcoa from Purchased Scrap**  
(thousands of metric tons)



**Energy**

As climate change legislation emerges around the world at an accelerated rate, we have led industry efforts to enact policy that promotes a market-based incentive to deliver an adequate supply of low to no carbon-emitting energy sources, without unduly burdening industry and affecting global competitiveness.

We are committed to reducing the energy requirements for all of our operations and will continue to develop and deploy improved energy monitoring and management systems and utilize more efficient equipment and processes when capital equipment changes are needed.

We also continue to evaluate the use of renewable energy sources. We have selected solar energy as a potential renewable energy source for several of our facilities. We completed three installations in 2007 and are currently monitoring data to determine the cost implications of future installations.

We are using and evaluating biodiesel fuel for mobile equipment and

baking furnaces, and we continue to develop hydroelectric resources where possible. In 2007, we started up our newest smelter, which is powered from a hydroelectric facility developed in partnership with

the Icelandic government and Landsvirkjun, the national energy producer. We also started construction in Brazil on the 210-megawatt Serra do Fação hydroelectric facility in 2007.

**Distribution of Total Energy Used** (percent)

	Oil	Gas	Coal	Hydro	Grid <sup>1</sup>
2000	8.5	17.6	34.5	36.7	2.7
2003	8.5	17.0	35.4	36.1	3.0
2004	9.1	17.4	36.1	34.3	3.0
2005	9.2	16.9	33.7	37.1	3.0
2006	8.5	15.0	25.2	36.1	15.2
2007	9.2	16.4	25.7	41.3	7.4

<sup>1</sup>Purchased electricity where the source of the power is not fully defined. Represents distribution of gigajoules from all purchased and self-generated electricity plus all fuel used.

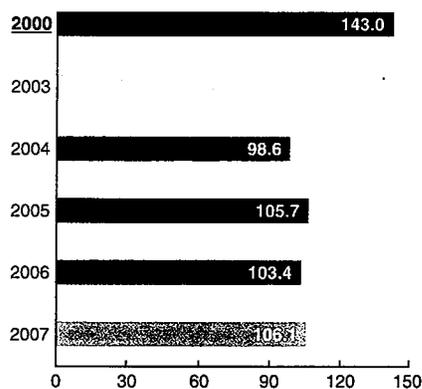
**Water**

Our goal of a 60% reduction in water use by 2009 and 70% by 2010 from a base year of 2000 remains a challenge. We continued to improve in 2007, increasing our reduction to 26%.

In 2007, we completed a basic risk profile for our significant water use plants. This profile numerically scored the risks associated with short- and long-term availability, use rates, and management costs to allow us to prioritize future projects in regions where action is most needed.

Since water is most significantly used in our refining and ingot casting operations, we are evaluating methods to capture water (and heat) lost through evaporation in refining and innovative ways to re-circulate ingot cooling water. We are also re-evaluating quality requirements to assess the validity of using secondary sources of water in our processes. This will reduce both the need to extract freshwater and discharge water to the environment, giving us time to explore process changes that might lead to reduced water demand overall.

**Total Process Water Use**  
(millions of kiloliters)



Increase in 2007 is due to first time inclusion of water use from our two rolling mills in Russia. The 2007 data from these two plants have also been added to the 2000 baseline year to adequately reflect the company's overall performance in 2007.

**Biodiversity**

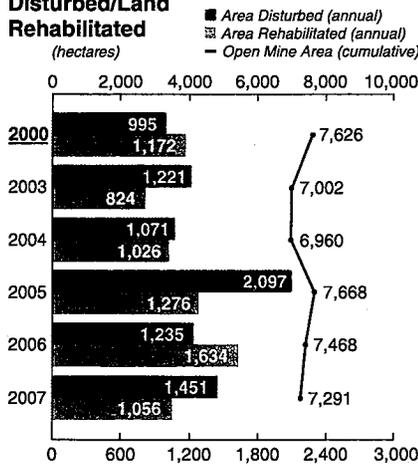
Consistent with our environmental policy and published position on sustainable development, we actively endorse the concept of conservation of biodiversity by operating worldwide in a manner that minimizes effects on natural habitats and biological resources.

We uphold a commitment not to explore or mine in World Heritage Sites. We are also committed to avoiding legally designated protected areas where strict nature conservation is the management objective. More broadly, we endorse the concept of multiple land use where possible, having successfully operated mines in sensitive native ecosystems and demonstrated our ability to avoid impacts to protected species and targeted values and to reestablish complex ecosystems.

With the increasing concern for controlling greenhouse gas emissions and their impact on climate change, we also look to incorporate carbon offsetting opportunities in the revegetation and restoration work we perform.

During 2008, we will be developing a template for biodiversity management plans that all of our locations with substantive land holdings will be required to develop. We will be seeking advice from stakeholders and consulting with site personnel.

### Mining Land Disturbed/Land Rehabilitated



Area disturbed means annual land used in each reported year for mining or for mining infrastructure (roads, shops, crushing equipment, conveyors). Area rehabilitated means annual land returned to nature or to productive use (such as farming) after mining or decommissioning of mine infrastructure in each reported year. Open mine area is the cumulative area of land that has not been rehabilitated (including active mines and land used for mining infrastructure). One hectare equals approximately 2.5 acres.

## Case Study



### Less to Landfill Creates Funds for Community

More than 170,000 used plastic cups from Alcoa's Primary Growth Products office in São Paulo, Brazil, are no longer destined for the landfill each month under a waste minimization program that not only reduced overall landfill waste by 48% in just two months but also generated revenues for a local organization working with the homeless and unemployed.

Implemented in March 2007, the Conscious Environment Program was created to reduce five metric tons of office waste each month to meet Alcoa's global sustainability goal of a 50% reduction in landfill waste by 2007 and a 100% reduction by 2015. The program emphasizes education and communication to promote changes in the consumption and waste disposal routines of the office's 900 employees.

The first step in the program was the formation of a cross-discipline team to spearhead the effort, which began with an analysis of the office's waste stream. This analysis helped pinpoint where and what kind of waste was being created, as well as the means of its disposal. The major finding was that recyclable material, primarily paper, accounted for 85% of the 4,840 kilograms (10,670 pounds) of waste generated and sent to the landfill monthly.

Changing the office culture surrounding the consumption, disposal, and collection of waste within the offices required exten-

sive education and communication prior to the implementation of new requirements. Lectures on waste minimization and segregation were supported by a communications campaign as well as humorous skits presented by trained actors.

Specific actions implemented at the office included the following:

- Eliminating individual waste baskets;
- Creating centrally located disposal stations to collect and segregate a variety of materials;
- Replacing disposable cups with mugs and squeeze bottles; and
- Using water served in pitchers instead of bottled water during meetings.

As a result of these activities, the amount of recyclable waste collected each month jumped from 660 kilograms (1,455 pounds) to 2,340 kilograms (5,159 pounds)—an almost four-fold increase. Conversely, the monthly waste to landfill declined to 2,500 kilograms (5,511 pounds).

Most recyclable waste is donated to the Cooperative of Production, Collection, Screen, and Processing of Recyclable Materials, a non-governmental organization that provides jobs to the homeless and unemployed. The US\$670 in monthly revenues from the Alcoa waste material covers the monthly income of two cooperative members.

## Emissions, Effluents, & Waste

While our ultimate goal is to eliminate the waste created, we very closely manage the wastes we do generate, using modern technology for discharge treatment and control. We also maintain a very robust environmental compliance tracking system that ensures rapid corrective action of any upset conditions and best practice sharing to ensure that all of our operating locations minimize the potential for unacceptable impacts to the environment.

In 2003, we achieved our target of reducing greenhouse gas emissions by 25% below 1990 levels by 2010. In 2007, we achieved further reductions in direct emissions linked to our closure of three lignite-based power units in Rockdale, Texas, USA, bringing our total reduction to 33% from 1990 levels. We have also made considerable progress on some of our other emission targets, such as NOx and VOC emissions (reductions of 50% and 44%, respectively).

The reduction of mercury emissions remains a significant challenge for us. While our reduction improved from 2% in 2006 to 10% in 2007, we have much ground to gain to meet our goal of an 80% reduction by 2008.

We have set a goal to have zero waste disposed in landfills by 2015, with a short-term goal of a 50% reduction in landfilled waste by 2007 from a base year of 2000. Many of our facilities throughout the world have made great strides in reducing the waste they landfill, helping us achieve this goal in 2004. While we have been able to make further reductions in landfilling routine production-based wastes, these were

offset by several non-routine projects, such as pot line dismantling and process equipment upgrades.

We continue to make progress in converting a significant waste from our smelting process—spent pot lining (SPL)—into an energy and mineralizer resource for cement kilns, recycling 23% of the SPL we produced in 2007. While this is up from the 17% we recycled in 2006, progress has been slower than desired. We are aggressively working to expand the market for this material, and this should allow for rapid increases in

volumes recycled in the next few years.

We are also exploring additional opportunities to use bauxite residue—a significant byproduct of the alumina refining industry—as a source material for a variety of applications. In addition, we have developed, tested, and, in some cases, implemented process modifications aimed at reducing the environmental footprint of residue storage and chemically rendering the material so it is more suitable for re-use or long-term management.

### Emissions

	Direct GHG Emissions (million metric tons of CO <sub>2</sub> equivalents)	SO <sub>2</sub> (thousands of metric tons)	NOx (thousands of metric tons)	VOCs (thousands of metric tons)	Mercury (thousands of kilograms)	Fluoride (kilograms/metric ton of aluminum produced)
2000	38.3	309.2	65.7	18.7	4.35	0.95
	33.7	289.1	53.6	13.2	3.50	0.84
2004	33.7	291.4	51.3	11.6	4.16	0.83
2005	34.4	271.6	44.7	11.6	3.99	0.80
2006	33.9	261.5	42.6	11.9	4.24	0.74
2007	31.1	214.6	32.8	10.4	3.93	0.71

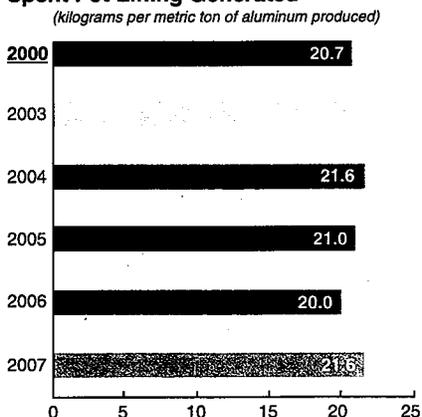
Alcoa measures its progress on GHG emissions against a 1990 baseline, which was 46.1 million metric tons. The fluctuation in mercury emissions is directly linked to variation in the amount of bauxite processed in our refineries.

### Waste

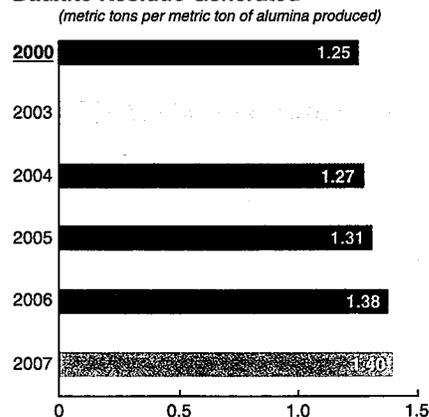
	Total Wastes Generated (millions of metric tons)	Total Wastes Landfilled <sup>1</sup> (thousands of metric tons)	Total Wastes Sold or Recycled (thousands of metric tons)
2000	1.76	858	888
	1.64	474	1,259
2004	1.49	369	1,097
2005	1.65	361	1,045
2006	1.60	371	1,042
2007	1.61	412	999

<sup>1</sup> Does not include bauxite residue. Increase in landfilled waste in 2007 is due to additional spent pot lining associated with potline demolition work and treated at our Gum Springs, Arkansas, facility, as well as some one-time wastes associated with expansion or process modification.

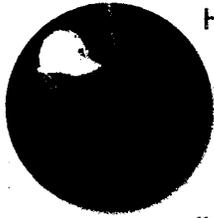
### Spent Pot Lining Generated



### Bauxite Residue Generated



# Health & Safety



## Health

To achieve our ideal state of zero work-related illnesses and injuries and improved health and well-being for all employees, we strive to identify and quantify health risks in the following categories:

- Chemical, physical, and biological agents present in Alcoa locations from our manufacturing processes, operations, or products;
- Work-related injury that may be triggered or exacerbated by non-workplace factors; and
- Acute and chronic disease that may be associated with, or impacted by, workplace factors.

With the health risks identified, we systematically eliminate or control the identified risks through a balanced scorecard approach to planning. We establish and track long-term and incremental targets to quantitatively monitor progress toward achieving our stated goals and the ideal state. Global cross-functional lead teams are commonly established to comprehensively address specific target areas, such as ergonomics.

The following are recent achievements in health:

- Through the end of 2007, we had 4,568 (12%) fewer employees work in areas with exposures above the occupational exposure limits (OELs) for noise, and 3,830 (15%) fewer employees work in areas with exposures above the OELs for chemicals, as compared to the 2006 baseline;
- Between 2002 and 2007, the proportion of all recordable injuries that were ergonomic-related went from 32% to 19%, a 41% decrease; the proportion of lost workday cases due to ergonomic issues went from 36% to 26%, a 28% decrease; and
- Our overall reported annualized incident rate of new work-related hearing shifts was 0.42% at the end of 2007, against a target of 1%.

## Safety

Successful safety systems are built on a foundation of values and principles, with the cornerstones being anchored in place by people, trust, and production system stability.

The following are the four main activities undertaken in support of our safety system:

- Assessing the risks, aspects, and impacts associated with our products, services, and operations;

- Developing and implementing operational controls with built-in layers of protection;
- Monitoring and maintaining the risk assessment, controls, and implementation to ensure they are current and effective; and
- Reacting to correct gaps in our protective systems and continuously improve system stability.

We believe world-class safety performance is attainable through dedicated effort, and one of our guiding principles is that we value human life above all else and manage risk accordingly. One life lost is one too many. Unfortunately, we experienced 36 fatalities between 2000 and 2007, including five in 2007.

During 2007, we actively participated in the National Forum on Fatality Prevention in the Workplace, which was funded by an Alcoa Foundation grant. We also reviewed approximately 30 historical fatalities and other high-consequence events with the assistance of an independent third party to evaluate the systemic root causes of catastrophic incidents.

In addition to fatality prevention, the 2008 continuous improvement plan will continue to target hand/finger and employee-new-to-the-job injuries. Employees new to the job experienced 33% of our total recordable injuries in 2007, while hand/finger injuries accounted for approximately 26%. Overall, the 2007 total recordable injury rate for employees new-to-the-job improved by 14% over 2006 results, and the hand/finger injury rate improved by 15%.



**Suzanne Bannerman**  
Physiotherapist and  
Ergonomist  
Pinjarra Alumina Refinery,  
Australia

*"Sustainability for me is using our resources wisely and always looking for opportunities to minimize our 'carbon footprint.'"*

## Key Challenges

### Chemical Exposure Control

**Goal:** From a 2006 baseline, reduce by 20% either the number of employees who work in areas with chemical exposures that exceed our defined occupational exposure limits (OELs) or the magnitude of these exposures by year-end 2008.

**Challenge:** OELs are continually being lowered around the world, and some values of relevance to the aluminum industry are approaching the limits of detection. We sometimes establish our own internal company limits for critical chemicals, and these are typically more stringent than even the most conservative regulatory limits. As a result, new groups of employees are identified as working in areas with exposures exceeding the newly defined OELs, thus potentially prolonging our long-range effort to eliminate all employees from overexposure areas.

**Geographical Differences:** For some substances, country and regional OELs can vary widely. Various regulatory agencies and advisory groups around the world may not always be synchronized on their respective agendas or methodologies, although there has been some effort in recent years to move in that direction.

**Strategy/Key Actions:** As newly established OELs become increasingly lower, additional strategies are often necessary to control to these limits. This may require significant adjustments in work practice controls, personal protective equipment, or engineering controls. The implementation of these additional control strategies requires engagement of all relevant business unit stakeholders, as well as the unions. Where appropriate, Alcoa is an active participant in the external OEL-setting process.

### Fatality Elimination

**Goal:** Zero fatalities.

**Challenge:** Many of our manufacturing operations have inherent fatality risks that must be eliminated or mitigated. Future challenges in achieving this goal include:

- Retention of talent, institutional knowledge, and experience, as a large percentage of our most seasoned safety professionals will be transitioning out of the workforce in the next five to seven years;
- Recruitment of new employees in developing countries, where workers often come from rural areas with little or no industrial experience upon which to calibrate their perception of risk; and
- An increase in the number of new employees—a group that tends to suffer higher on-the-job accident rates.

**Geographical Differences:** Fatality risk profiles differ by region, both within and external to Alcoa. The International Labour Organization (ILO) concluded that workplace accidents have leveled off in many industrialized or emerging market economies. However, other countries currently experiencing rapid industrial growth, such as those in Asia and Latin America, are experiencing more fatalities.

By comparison, Alcoa operations in China have worked fatality-free (2003-2007) in a country where the estimated number of workplace fatalities has risen to almost

90,000 per year. We did experience one employee fatality in Latin America during the same period.

Similar trends have been identified by the ILO relative to construction fatalities in Latin America, where rapid growth in the construction industry segment appears to be linked to an increase in fatalities within the region. Our experience is that the more remote construction projects in this region often have a higher risk profile. A 2006 fatality at our Juruti mine project in Brazil, which includes a railroad and port facility, stands as a reminder that we are not immune from those risks. The contractors on the project worked 15 million hours without a lost workday and achieved an impressive total recordable rate of 0.31 through early 2008. Our track record relative to construction safety remains one of the best in the Latin American region.

**Strategy/Key Actions:** Through a focused fatality prevention program, we are instilling in our employees and contractors a safety culture that involves recognizing risks, wearing personal protective equipment, following established procedures, and reporting unsafe conditions.

In 2007, we reviewed approximately 30 historical fatalities and other high-consequence events with the assistance of an independent third party to evaluate the systemic root causes of catastrophic incidents.

We continue to test how our management systems contribute to fatalities and what predictive or leading indicators might be used to signal when we are moving closer to an at-risk condition and/or a weakness in our protective systems.

## Case Study

### An Evolving World-Class Safety Culture in Iceland

Integrating the world-class safety standards of Alcoa and Bechtel, combined with strong leadership support of safety throughout the construction of Alcoa's first new aluminum smelter in more than two decades, reduced injuries and served as a catalyst for increased safety awareness in Iceland.

The three-year Alcoa Fjarðaál construction project in East Iceland logged 11.5 million man hours with a total of six lost workdays and 34 recordable injuries. An average of 1,300 people were on the site each day, working either for Bechtel or one of the project's 100-plus contractors and subcontractors.

"This project has brought a totally different safety culture to Iceland," said Gestur Pétursson, EHS manager for Iceland-based subcontractor Inpro. "The main difference is the level of commitment and involvement on behalf of the management team. Safety is part of their management philosophy."

Alcoa's safety strategy for the Fjarðaál project was to team with contractor Bechtel to design safety systems that would achieve a zero-incidents goal. The first step was integrating Alcoa's standards,

which weren't as geared toward construction, with those of Bechtel, which were. Bechtel was responsible for managing the safety component of the project, with the Alcoa team providing input and oversight.

"We had a number of challenges to overcome," said Joseph Zoghbi, Bechtel's ES&H manager for the project. "The safety culture was completely different, so there was a very steep learning curve for the local employees. There was also a shortage of local labor due to the remoteness of the project. We imported 1,500 Polish workers, and we had to overcome cultural and language barriers to build the Alcoa/Bechtel safety culture."

The multi-tiered safety strategy included the following components:

- **Incident management**—A system to record and investigate all incidents, including near-misses, was put in place at the beginning of the project.
- **Contractor selection**—All contractors underwent a prequalification process with an emphasis on safety performance and training. Safety performance was also included in the project's scope of work and terms and conditions.
- **Training**—Each worker had to participate in a week-long training session that included an introduction to all safety regulations and task-specific training.

- **Hazard control**—The project included detailed programs on fall protection, excavation, electrical safety, mobile equipment, and more.

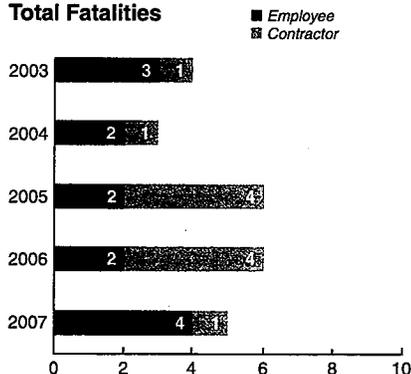
- **Audits**—Alcoa conducted periodic safety audits in addition to Bechtel's own audit structure.

Alcoa and Bechtel also sponsored the creation of an Icelandic safety association called the Green Cross to improve safety at work and home. Members include industry representatives, labor unions, and the Iceland Administration of Occupational Safety and Health.

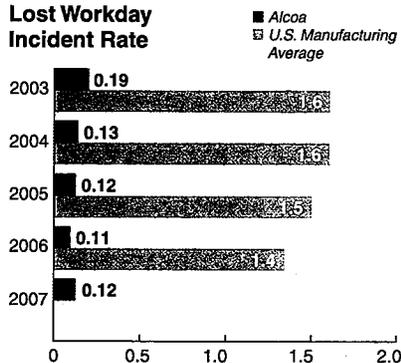
"The Alcoa project has already affected the overall safety culture on the island," said Pétursson. "For example, several major purchasers of contractor services are reviewing their selection procedures and methods to emphasize environment, health, and safety as key criteria. In addition, local employees who worked on the Fjarðaál project learned the safety culture and have begun to push for it on other projects."

He adds, "Companies, even those outside of construction, are now asking how they can be like Alcoa and Bechtel. World-class performance like these two companies have doesn't happen overnight, but Icelandic firms are starting on that path because of this project."

**Total Fatalities**

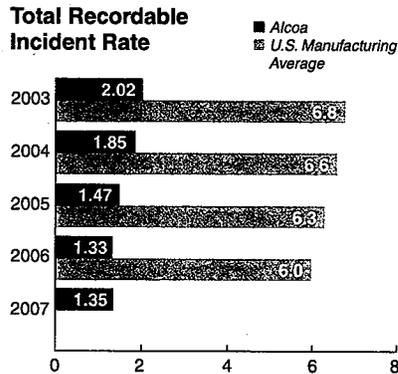


**Lost Workday Incident Rate**



2007 Bureau of Labor Statistics U.S. manufacturing industry average not available. Lost workday (LWD) incident rate represents the number of injuries and illnesses resulting in one or more days away from work with or without days of job transfer or restrictions per 100 full-time workers. As of 2008, we are reporting rolling LWD rates to more accurately reflect the lost time that occurs in a subsequent year but is recorded against the initial injury date and year. As a result, the rates reported in prior years may show slight variation from quarter-to-quarter and year-to-year.

**Total Recordable Incident Rate**



2007 Bureau of Labor Statistics U.S. manufacturing industry average not available. Total recordable incident (TRI) rate represents the number of injuries and illnesses resulting in days away from work, job transfer or restriction, medical treatment, or other recordables per 100 full-time workers. As of 2008, we are reporting rolling TRI rates to more accurately reflect lost time and restricted or medical treatment that occurs in a subsequent year, but is recorded against the initial date and year. As a result, the rates reported in prior years may show slight variation from quarter-to-quarter and year-to-year.

# Our People



Our people are the foundation of our success throughout the world.

Our goal is to attract, develop, and retain the best talent and create an environment that enables each employee to contribute to our collective success.

## Diversity & Inclusion

Our strength as a company is the many perspectives that our people bring to the workplace. This is how we define diversity.

Alcoa's chief executive officer, chief operating officer, and executive team hold the organization's leadership accountable to endorse and actively champion the company's diversity initiatives. Leadership accountability for diversity is integrated into the overall business strategy, and the results are tied to incentive compensation.

Key diversity developments in 2007 include the following:

- Each business unit developed a diversity performance initiative aligned with our corporate diversity and inclusion strategy;
- We introduced coverage for domestic partners (of either gender) under the U.S. health and welfare plans;
- Continued expanding the reach and initiatives of our existing corporate-wide employee networks—the Alcoa Women's Network and Alcoa African Heritage Network—and site-based networks; and

## Key Challenges

### Diversity & Inclusion

**Goal:** Value and leverage the differences among our current and future employees to create an inclusive, high-performing work environment.

**Challenge:** We are working to both eliminate internal barriers to assure all employees participate and develop a reputation externally as an employer that values diversity and inclusion.

**Geographical Differences:** The cultural and regulatory differences in our global communities require us to develop region-specific strategies and programs.

**Strategy/Key Actions:** We have created a multi-pronged strategy that includes:

- Supporting a diverse group of employee networks;
- Developing business-based strategies to improve our diversity and inclusion; and
- Integrating leadership accountability for diversity into the overall business strategy and tying the results to incentive compensation.

### Talent Management

**Goal:** A talented, high-performing employee workforce.

**Challenge:** In today's competitive labor market, we must retain and develop employees so they can perform effectively and be prepared to take on new roles.

**Geographical Differences:** Not significant.

**Strategy/Key Actions:** We have numerous programs and initiatives aimed at talent development, including:

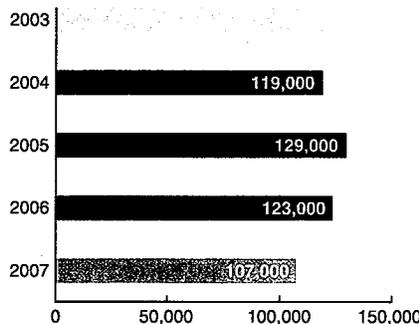
- A performance management process;
- A people review process that assesses our top executives and managers globally;
- Learning Express, a self-service online learning management system;
- Executive leadership development programs; and
- The Alcoa Campus Partnership Program to recruit new talent through relationships with more than 20 key U.S. universities.

- Launched the Employees at Alcoa for Gay and Lesbian Equality (EAGLE) corporate-wide network.

### Global Women in Leadership Positions

	Manager (percent)	Senior Managers (percent)	Executives (percent)
1999	9	7	2
2005	14	10	8
2006	14	10	9
2007	15	14	10

### Number of Employees



*Alcoa does not aggregate global data differentiating part-time from full-time employees. Decline in employment numbers due to a series of divestitures.*

## Compensation

Our compensation programs are designed to support our business strategy by rewarding behaviors that deliver results against business goals. The programs drive performance to meet the expectations of our internal and external stakeholders.

We use a total compensation approach in each of our respective global markets by incorporating base and variable pay, along with appropriate benefits. We ensure that our compensation meets or exceeds legal minimums and is in full compliance with all applicable laws in all jurisdictions in which we operate.

To attract, retain, and motivate our employees, we reward them at a level that is competitive within the relevant labor market. We target our compensation at the median of competitive industry standards and conduct annual compensation and benefits benchmarking in each of our labor markets to ensure we remain competitive. Through strong individual, team, or company performance, employees have the opportunity to earn above-target compensation.

We face several challenges in designing and executing our compensation approach:

- Growing competition in the market for leadership talent has resulted in more pressure to attract new talent and retain our existing leaders;
- New markets, such as Russia and China, have a more volatile compensation environment and require a more flexible approach to attract and retain top employees; and

## Case Study

### Leadership Succession in Russia

Increasing the active involvement of Russian managers in leading the Alcoa Russia organization is an important part of integrating acquired Russian facilities into the Alcoa system.

After acquiring the Samara and Belaya Kalitva fabricating facilities in 2005, Alcoa brought numerous specialists from its facilities in 12 countries to deploy its practices in operations, commercial activities, and corporate governance at these new Russian locations. In 2007, the development and implementation of a leadership succession plan is providing for a smooth replacement of the foreign Alcoa employees with their Russian counterparts.

In its succession approach, Alcoa Russia both promotes internal talent and hires external candidates. Development of internal leaders is the primary focus, as this attracts people who are already familiar with the operations and who have shown commitment to their location. The approach also helps talented people inside the organization realize their potential.

The succession process begins with expatriate leaders identifying the most promising people in their function. These candidates are put into two categories: managers who are ready to fill the leadership position and those who need extra support and mentoring if placed in the job immediately. The leader then creates an individual development plan for the named successor that defines objectives to support the individual's development, actions needed, milestones, target dates, and resources that will help achieve the objectives. Alcoa training, such as leadership and management skills and the executive leadership development program, are an important part of this plan. All are also part of the training regime for external hires, who are sourced when no internal candidates are found.

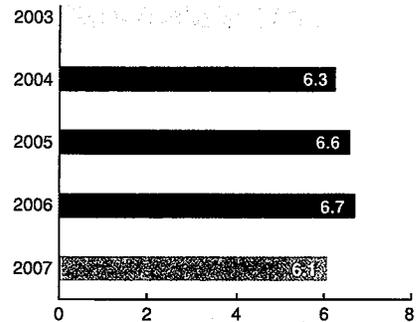
Implementation of the succession approach in 2007 helped Alcoa Russia promote Russian managers to the following leadership positions: controller, finance director, procurement and logistics director, country manager, and forging deputy lead.

On January 1, 2007, Alcoa Russia had 52 expatriates on its staff. It finished the year with 31—a 40% reduction. Additional successions are slated for 2008.

- Rising benefit costs have led us to explore new ways of making our benefit programs effective for our employees while limiting long-term liability for Alcoa.

### Labor Costs

(billions of US dollars)



Includes salaries plus employee expenses for external training, transfer and relocation, expatriate costs, workers' compensation, travel, recognition and rewards, medical expenses, meals, recruitment, transportation, education, work clothes, retiree medical, and other employee-related expenses. Excludes contract and temporary labor and computer- and communications-related expenses.

## Talent Management

We are keenly aware of the changing climate with respect to the tightening labor market, and we have adopted an approach that has four key elements: acquisition, assessment, development and retention/deployment.

In 2007, approximately 85% of salaried employees participated in our performance management process. We also conducted a global assessment of the top executives and managers, and more than 1,200 leaders were reviewed in 2007 to inventory and assess the depth of our talent, and plan development opportunities to meet the needs of the individual and organization.

In 2007, Learning Express—our self-service online learning management system—was available to our employees in Asia, Brazil, France, Hungary, Iceland, the Netherlands, the United Kingdom, the United States, as well as parts of Mexico,



**Wade Hughes**  
Director of Public Strategy  
Global Primary Products  
Growth, Energy, Bauxite,  
and Africa

***“If there is a universal template for sustainability, it will be found in tolerance and willingness to work together to satisfy often competing aspirations and needs, while being responsive to the ever-changing capacity of the planet to support us.”***

Costa Rica, and Canada. More than 156,000 training records were tracked for instructor-led courses and more than 38,000 for online courses in 2007.

We use a variety of methods to educate our employees on sustainability. For example, the theme of the 2007 annual leadership meetings in Europe and Brazil was sustainability. Our employees also attend sustainability-oriented programs and courses conducted by independent organizations, such as the University of Cambridge and the Sustainable Enterprise

Academy. In addition, we expanded our internal sustainability website in 2007 to provide employees with additional insight on how they can integrate sustainability into not only their business practices but also their daily lives.

## Employee Relations

In 2007, we conducted our second annual global employee engagement survey—Global Voices, One Company. The overall response rate remained high at 69%, although this was slightly down from the 2006 participation of 70%. Overall employee engagement increased to 50% in 2007 from 49% the prior year.

During 2006 and 2007, we reviewed survey results with employees and put action plans in place to improve the overall engagement levels. We will again identify action items based on survey feedback, and we will work to improve the year-over-year results.

# Community



Community matters to Alcoa. Communities hold our franchise to operate, and we need their resources, infrastructure, markets, and workforce to thrive. We

owe them our integrity, our careful stewardship of the environment, and our ability to offer jobs and community support. It's a mutual compact serving mutual interests. It lasts over time. It's expressed in our values and goes further to support our sustainability goal of delivering net long-term benefits to our many stakeholders.

## Combined Community Investing

In 2007, Alcoa Foundation provided more than US\$28 million in grants in 36 countries where Alcoa operates, with Alcoa and Alcoa-related foundations contributing another US\$21 million to support projects and partnerships with non-governmental organizations (NGOs) around the world. Communities where Alcoa has a presence are the primary focus of these grantmaking programs.

Alcoa Foundation continued to develop its US\$9.2 million Conservation and Sustainability Fellowship Program, which is advancing knowledge in the field of conservation and sustainability through research fellowships to outstanding academics and practitioners from NGOs.

## Key Challenge

### Consistency in Community Consultation

**Goal:** Ensure Alcoa approaches community consultation in a consistent manner globally while recognizing local circumstances.

**Challenge:** A variety of factors, including cultural and socio-economic issues, hinder us from using a formulated approach to community consultation.

**Geographical Differences:** In the communities in which we operate, there are widely varying means in which to conduct community consultation. In Guinea, for example, many meetings are held under trees with photographs and drawings to overcome literacy issues. In Iceland, we instituted a very sophisticated process for

stakeholder engagement for a new smelter project.

Each of our locations must tailor its community engagement to best fit the needs and expectations of its stakeholders.

**Strategy/Key Actions:** All of our locations are required to implement the Alcoa Community Framework by 2010 to establish a consistent level of community citizenship. The framework allows for great local flexibility and results in a variety of community engagement opportunities.

Other means by which we ensure consistent consultation is to engage stakeholders early in the development process for a new facility and or expansion of an existing one. We also seek engagement with a broad representation of the community—proponents as well as opponents.

The Foundation also continued to build its conservation and sustainability portfolio of strategic, longer-term partnerships by funding larger, visible programs and working with partners to build in measurable metrics and evaluation. These include the following:

- Conservation International and affiliates in Brazil, China, and Guinea;
- Jane Goodall Institute in China and Guinea;
- Rainforest Alliance in Honduras, Mexico, and Vietnam;
- The Nature Conservancy in Australia, China, and the United States;
- World Resources Institute in Brazil, China, and the United States; and
- World Wildlife Fund in China and Nepal.

Alcoa Foundation increased its investment in climate change initiatives for practices to decrease greenhouse gas emissions and increase the use of renewable energy. These investments also encouraged broader involvement of multi-sector stakeholders in climate change policy, development and use of climate change mitigation and adaptation approaches, and academic and applied research to find solutions to climate change issues and problems.

## Case Study

### Workshop Helps Rural Women in India Gain Entrepreneurial Skills

A four-day workshop funded by a US\$2,700 grant from Alcoa helped first-generation rural women entrepreneurs in India acquire some of the basic skills necessary to run and expand their small businesses.

The women and a partner operate a small kiosk from their home, at an offsite space, or in a rural market as part of a program run by the Drishtee Foundation. Through the kiosks, these entrepreneurs can provide services like computer education, insurance and financial services, and

more. They also sell products of value to rural households, including batteries, flashlights, seeds, and fertilizer. All profits generated are kept by the kiosk owner.

"We currently have a network of around 1,500 kiosk operators in more than 10 states of India, and of these about 450 are women," said Swapna Mishra, a program coordinator for Drishtee. "These women entrepreneurs must overcome many personal, social, and business challenges in running their kiosks, and the four-day workshop was designed to strengthen their entrepreneurial skills."

Nine women and their operating partners attended the March 2007 workshop, which had the following objectives:

- Provide an understanding of the various aspects of business development, sales, and marketing strategy in terms of existing services and products available from Drishtee;
- Reiterate the importance of leadership qualities and instill the motivation required for a rural entrepreneur to establish and expand her business;
- Build skills to manage finances, debt, and bookkeeping; and
- Explain the new services and products available from Drishtee.

"The workshop was useful, as I learned how to expand my business," said Garima Dwivedi, a kiosk operator in the village of Thathiya. "I am highly motivated and am also motivating the girls around my center to join classes. I am doing a lot of advertising, and more computer learning classes are being formed. Of course, I still have to deal with the problem of a lack of steady supply of electricity, but it does not dishearten me."

Adds Reena Gupta from Fatehpur, "I gained knowledge about business and handling customers, and also about Drishtee's various services and products. I also learned how to contact people and inform them about Drishtee, and the training on ledger maintenance helps me in my day-to-day tasks."



### Combined Community Giving (US dollars)

	Alcoa Foundation	Other Related Foundations	Alcoa	Excess FMV of Donated Property	Total
	14,970,191	517,000	11,069,967	265,405	26,822,563
2004	17,000,536	533,707	10,691,586	556,770	28,782,599
2005	22,751,132	646,629	16,311,579	272,122	39,981,462
2006	26,065,078	836,060	15,425,314		42,326,452
2007	28,327,647	1,099,686	19,952,561		49,379,894

In 2006, Alcoa discontinued collecting data on excess fair market value (FMV) of donated property.

## Employee Volunteer Initiatives

Employee volunteerism offers a growing and global opportunity to deepen the engagement with our communities, and it is a source of lasting, positive social impact.

In 2007, 8,309 employees provided 39,486 hours of community service through the ACTION (Alcoans Coming Together In Our Neighborhoods) program, earning the organizations they served nearly US\$1.6 million in grants. Alcoa also provided nearly US\$2.2 million in Bravo! grants to recognize 594,432 employee volunteer hours by 8,498 Bravo! volunteers.

More than 17,000 Alcoa employees from 36 countries and more than 200 communities volunteered their time as part of the October 2007 Month of Service. The Month of Service has raised the profile of Alcoa's volunteers and volunteering efforts around the world, with more than 47,160 employees, family members, contractors, and community members participating in 2007 events.



**Mamadou  
Angelo Diallo**  
Surveyor  
Alcoa Guinea

*"Sustainable development is only achieved when there is the involvement of the communities in places where we are working."*

## Community Consultation

The Alcoa Community Framework is a tool and process we use to facilitate and measure ongoing relationship-building and communications between Alcoa and our community stakeholders. In 2007, we continued the rollout of the Alcoa Community Framework in Africa, Asia, the Caribbean, Europe, and South America. About 90% of our worldwide operating locations had established community programs as of year end.

In Canada, the Sustainability Advisory Committee is advising Alcoa's Primary Metals Canada operations on how best to integrate sustainability to meet the expectations of society. The committee comprises eight stakeholders representing key perspectives and five Alcoa representatives.

In-depth community consultation is an important component for any new project we undertake anywhere in the world, as well as for expansions and upgrades at existing facilities.

We have continued our extensive community consultation for the Juruti bauxite mine project in Brazil, involving dozens of NGOs, community organizations, and governmental bodies. In early 2008, we helped launch the Council for Sustainable Juruti, which will provide a permanent avenue for dialogue and consultation among stakeholders.

A proposed smelter project in Greenland is developing a foundation of extensive consultation, specifically with the residents of the three municipalities that helped Alcoa seek a site for the smelter. In August 2007, more than 120 local people attended each of the public meetings held in the three cities during the first round of community consultation. The next community consultation meetings in January 2008 were attended by more than 160 people at each location—a record for such meetings in Greenland.

## Case Study

### Advisory Panel Builds Bridge with Community

Part of Alcoa's vision is to be the best company in the world in the eyes of the communities in which it operates, and an active community advisory panel at Alcoa's Rockdale Operations in central Texas (USA) is helping the company move closer to that goal.

Formed in 2003, the Community Advisory Panel for Alcoa Rockdale Operations (CAPARO) consists of 15 citizens that represent diverse geographic regions and areas of interest. No Alcoa employees are members of the panel, but the Rockdale location manager serves as the smelter plant's liaison. Panel meetings—chaired by an independent professional facilitator—are open to the public, with meeting notices placed in the local newspapers.

"The panel has been a good attempt by Alcoa to build a bridge with the community," said Danna Rother, a panel member who owns property across from a newer lignite coal mine that Alcoa sold in mid-2007. "Everyone is going to have their priorities, and there are going to be different points of view. However, the panel gives a chance for everyone's voices to be heard, and it also allows Alcoa to build a knowledge base in the community so people can better understand what the plant is doing and why. I know that I appreciate a little more some of the things the plant is up against, even though I still don't want the mine in my front yard."

Adds Bob Lee, a panel member who is a retired county judge and ranch owner, "The panel provides the proper venue for opinions to be expressed and problems that may exist within the community to be communicated to Alcoa by a person most community members trust and confide in. The panel members then go back to the people they represent to convey the



*CAPARO meeting*

dialogue that occurred with Alcoa on the various issues."

Panel members determine the topics to be covered in each meeting and also invite guest speakers to provide additional information on areas of interest. Issues of concern are collected at the beginning of each meeting and either resolved during the meeting or slated for follow-up by Alcoa.

"Two things that I will continually question Alcoa on is air quality and water use," said Lee. "Those are the issues that I think are important to people in our community, and the plant does work to prove to me it is trying to improve both."

Alcoa presents a plant update at each meeting, covering activities in environment, safety, business performance, and community. During months when a meeting is not scheduled, the plant sends a written update to each panel member.

"I've seen a change in the relationship the community has with Alcoa since the panel was formed," said Rother. "For example, when the new lignite mine was announced, there was a lot of anger initially. Once that anger subsided, the affected citizens used the panel meetings as a way to get information. However, I'm disheartened by the number of local citizens who don't participate in the meetings and instead still rely on gossip. If they attend the meetings or seek out a panel

member, they'll understand what is really happening."

Adds Lee, "Although there are still strained relations between the Rockdale Operations and some political factions, the panel has provided, if nothing else, transparency for the corporation. Nobody could deny that. The panel was needed and wanted, and I don't hear as much negativity as I did before. While I can't attribute all that to the panel, I do think it's certainly been a part of that change."

He continues, "I am continually amazed at the amount of importance Alcoa places on relationships with communities and individuals. I don't think that's a norm in the business world."

In 2008, a second community advisory panel will be formed to cover the power generating site at the Rockdale Operations and the new Three Oaks lignite mine—both of which Alcoa sold to TXU Mining Company LP (now owned by Luminant). The Rockdale panel will focus solely on Alcoa's smelter, atomizer, and the closed Sandow Mine, which is currently undergoing site reclamation.

# Economic



We understand the importance of the economic value we generate to our shareholders, customers, employees, and the communities in which we operate.

In 2007, input costs, including caustic, fuel oil, carbon, and ocean freight, were once again significantly higher than in the previous year. The U.S. dollar also weakened considerably against currencies in which we operate across the globe, such as the Australian and Canadian dollars, the Brazilian real, and the euro. Furthermore, we encountered production outages at our operations in Guinea, Jamaica, Tennessee, and Rockdale, Texas.

We were able to offset these challenges through continued higher realized prices for alumina and aluminum, improved volumes and productivity, and the net favorable impact of various portfolio actions.

Highlights of our performance include the following:

- Highest annual sales in our company's history—US\$30.7 billion—despite the absence of seven months of revenue from the soft alloy extrusion business;
- US\$2.6 billion in income from continuing operations, or US\$2.95 per diluted share—the highest in company history;
- Highest cash from operations in company history (US\$3.1 billion); and
- Debt-to-capital ratio of 30.2%, which is at the low end of our target range despite substantial share repurchases.

In 2008, we will strive to continue to improve margins through productivity and value-added products to help offset the significant increases in energy, raw materials, and other input costs.

We will also work toward investing in strategic growth projects, such as potential smelter development in Greenland and Iceland and smelter positions in China and the Middle East. In addition, we will continue to deliver new products and applications to new and existing markets, including the defense and oil and gas markets.

## Shareholder Value

We are focused on maximizing total shareholder returns, generating above cost of capital returns, and driving year-over-year earnings per share growth. Our continued strong financial track record has positioned us to achieve our primary financial goal—creating significant value for our shareholders.

In 2007, our total shareholder return (stock appreciation plus dividends reinvested) was 24%, far outperforming the Dow Jones Industrial Average and the Standard and Poor's 500 indices. While this was good, we are far from satisfied. This is why we took action to address our business portfolio, invest in capital projects around the world, continue to build bonds with our customers, and develop technologies that will deliver customer benefits—and cash—to the bottom line.

## Distributions to Shareholders

	Dividends <sup>1</sup> (millions of US dollars)	Dividends Paid per Common Share (US dollars)
	516	0.60
2004	524	0.60
2005	524	0.60
2006	524	0.60
2007	590	0.68

<sup>1</sup>Includes dividends to both common and preferred shareholders.

## Customers

We are sharpening our focus and picking up our pace in creating profitable and sustainable growth—derived from both customer-centered “organic” initiatives and strategic “inorganic” acquisitions—by expanding business with our existing customers and adding new ones, particularly in fast-growing global markets.

Our five market sector teams—Aerospace, Ground Transportation, Defense, Sustainable (Green) Infrastructure, and Oil and Gas—bring together our global marketing and application engineering capabilities to focus on particular sectors where our value propositions are compelling or soon will be.

The Sustainable (Green) Infrastructure Market Sector Team, launched in 2007, had an initial mission of evaluating, assembling, and branding the product offerings of our successful global building and construction businesses. This morphed and grew to include pursuit of opportunities in renewable and alternative electric power generation; clean water supply; and waste segregation, collection, and remediation. Through this expansion, we continued to grow our portfolio to include more energy-efficient products.

Aluminum is one of the world's most sustainable materials, with about 73% of the metal ever produced still in use. Most other materials likely have substantially lower values due

## Key Challenges

### Profitable Growth

**Goal:** Drive profitable growth in every business; generate growth and returns that are among the top in our industry.

**Challenge:** Some of the challenges include securing competitive and reliable power supplies, as well as quality bauxite reserves, for the long-term; delivering on our businesses in China and Russia; driving productivity gains in excess of cost increases; and successfully creating and delivering profitable growth projects.

**Geographical Differences:** None

**Strategy/Key Actions:** We have numerous programs and processes in place to help our businesses achieve our goal, including:

- Each business is developing a three-year perspective with well-quantified priority levers and personal accountability;
- We are investing in a growing number of hydroelectric projects in Brazil, including the Serra do Facão project. We are also actively working on extending various power contracts for at least another 20 years, including those related to our smelters in the Quebec province of Canada;
- We are in the midst of a major development of a bauxite mine in Juruti, Brazil;
- We are expanding and making capital improvements to our facilities in China and Russia;
- Market sector teams and the Alcoa Growth Process are helping our businesses identify and capitalize on growth opportunities;
- The Alcoa Business System helps drive waste out of our systems and better meet customer needs; and
- A stage gate process helps us determine the feasibility of a new facility and then deliver an approved project on time and within budget.

### Converting Growth Opportunities to Cash on an Accelerated Basis by Alcoa Businesses

**Goal:** To ensure that Alcoa businesses pursue and follow through to commercialization those market growth opportunities, projects, and products that offer Alcoa the best path to sustainable, profitable growth.

**Challenge:** Alcoa business units sometimes lack available resources—those that can be dedicated or prudently reallocated at the time the opportunity emerges—to follow through to commercial success the promising growth opportunities that are uncovered through Alcoa Growth Process studies; market sector team contacts, relationships, and activities; and even everyday customer listening visits or idea-generating sessions by the business unit.

**Geographical Differences:** None

**Strategy/Key Actions:** Alcoa's Growth & Market Strategy Team (G&MST) has expanded past its original thrust of solely identifying and quantifying profitable market opportunities to providing deeper commercial support to the businesses.

The G&MST is now lending experienced team members to serve in business unit commercial roles that have an exclusive focus on capturing the opportunity. The scope of market sector teams is being altered as necessary, in some instances to take on more of the actual market development activity that might normally be undertaken by the individual businesses.

Increasingly, G&MST resources are viewed by the business units as marketing peers rather than process consultants. The essence of the shift is demonstrated when business unit personnel say "We see the opportunity, it is important, but we don't have enough of, or the right, resources to allocate to this right now." G&MST has made the choice to focus on capturing what we see rather than developing even more opportunities that we can't/won't/don't pursue.

### Support of Capital Growth Strategy

**Goal:** Support Alcoa's capital growth strategy by utilizing local suppliers to reduce total construction time, accessing additional resources from local small companies, minimizing import duties, and improving relationships with local industry, communities, and governments.

**Challenge:** We are facing several critical constraints in regards to supporting our capital growth strategy:

- A shortage of skilled labor;
- Producers of major equipment and materials are experiencing limitations on manufacturing capacity, generating long lead times; and
- Global industrial growth is draining the availability of the infrastructure required to construct facilities, such as cranes, mobile equipment, etc.

**Geographical Differences:** For many projects, local businesses (those in the immediate vicinity of Alcoa's operations) are typically small and mostly not capable of handling a typical-sized work package for a mega-project.

**Strategy/Key Actions:** In regards to providing a sustainable workforce for growth projects, we are developing a long-term policy to support companies in the same locality and region as our operations. This policy helps ensure the local economies benefit from our operations and construction activities.

We will target the use of local and regional suppliers, wherever possible, to enhance local content. The objective is to minimize total project costs, including delay costs, through innovative procurement strategies that utilize the strengths of local and regional suppliers.

Within our guidelines of safe, ethical, and competitive business practices, we will:

- Invite capable local businesses to bid on every locally supplied or manufactured good or service;
- Work with local business interest groups to identify and utilize local suppliers;
- Where possible, structure bids to enable local supplier participation; and
- Help these suppliers do business with us by encouraging them to employ local labor in a timely manner.

## Case Study

### Measuring the Financial Impact of Alcoa's Presence

Beyond providing employment, Alcoa's presence in a country or community provides added benefits through tax payments, the purchase of local goods and services, and infrastructure improvements like roads, health care, and electricity.

One example is Alcoa's impact in Suriname through the Suriname Aluminum Company (Suralco). In 2006, Suralco accounted for roughly 69% of the export value of Suriname and 13% of Suriname's gross domestic product—more if multiplier effects are taken into account.

In 2007, Suralco employed 900 full-time equivalent employees, and payroll totaled nearly US\$29 million. The company also provided more than US\$14 million in pension payments to former employees. Other economic contributions included US\$24 million spent for around 900 contractors, miscellaneous supplies from local vendors, and medical specialists. The company also bought about US\$160 million in oil from the State Oil Company and paid nearly US\$60 million in taxes. In addition, Suralco produces about 80 megawatts of electricity for the Suriname

government—roughly 75% of the electricity needs of the country's capital city of Paramaribo.

Suralco also provided approximately US\$300,000 in scholarships for children of its employees, and Alcoa Foundation provided around US\$400,000 in grants for improvement projects in education, the environment, and health services. These grants are focused on sustainable development in the communities of the indigenous and semi-indigenous populations through the support of clean water and the improvement of schools and education equipment.

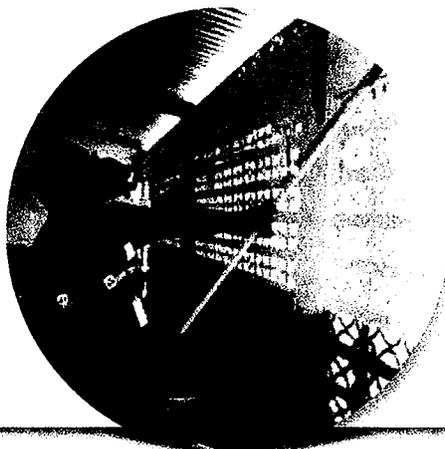
In 2007, Alcoa's Jamalco operations in Jamaica employed 564 full-time equivalent

employees, paid US\$24.4 million in salary and benefits, and spent US\$76.0 million on local contractor services and supplies. Additionally, Jamalco paid US\$26.3 million in taxes.

Alcoa Foundation invested approximately US\$372,804 in programs to improve the quality of life in Jamaica in 2007, bringing its investment in the nation between 2004 and 2007 to more than US\$1.88 million. The funding has been used to improve health care in Jamalco's operating areas, fund vocational training for residents and local farmers, continue development of local athletes, and provide educational assistance to needy children.

In August 2007, Hurricane Dean caused wide-scale damage to many houses and community buildings across the island. At Jamalco's request, Alcoa Foundation provided a US\$100,000 grant to Food For The Poor, an international relief organization with roots in Jamaica, to replace roofs and repair community facilities damaged by the hurricane. Jamalco and community volunteers helped clean and paint the buildings once repairs were completed.

*Alcoa employees paint the Toll Gate Community Centre in Jamaica after it was repaired by Food For The Poor*



to their material properties, longer history of production, or lower recovery/recycle value. Aluminum also offers a significant range of benefits—high strength, lighter weight, longer life, etc.—that helps our customers' products become more sustainable as well.

That's why we are focused on better understanding the sustainability of our current products and opportunities for improving and generating new ones. We are involved in developing products and processes to increase both the amount of aluminum used throughout the world and that which can be recovered for recycling.

We also work with our customers to help them integrate sustainable business practices into their products and services, which follows on our commitment to ensure safe and sustainable practices in our operations and products. In the United Kingdom, for example, our European

Wheel Products Group buys back used aluminum wheels when customers buy new ones through a program called Value for Life. Customers get new wheels that drive fuel savings and reduce emissions while also supporting the recycling of aluminum.

### Sales

	Sales (billions of US dollars)	Third Party Aluminum Shipments (thousands of metric tons)	LME <sup>1</sup> (US dollars per metric ton)
	20.3	4,987	1,428
2004	22.6	5,061	1,721
2005	25.6	5,459	1,900
2006	30.4	5,545	2,594
2007	30.7	5,393	2,661

<sup>1</sup>Average three-month aluminum price on the London Metal Exchange.

## Procurement

Procurement at Alcoa is a global function focused on delivering world-class solutions that drive increasing, sustainable value at a lower total cost to our businesses and communities.

Since 2001, we have worked to transform our procurement from a location-based, tactically focused organization to world-class global supply management. We have also embedded sustainability in the way we do procurement, making it an integral part of our organizational structure and core processes.

To address the need for overall coordination of the procurement

sustainability strategy, we created a new role in our procurement organization—director of sustainability—in 2008 to manage this important objective.

Key sustainability activities include being an active participant in the Institute for Supply Management's Committee for Social Responsibility, using a robust review process to ensure new suppliers adhere to our



**José Manuel Alvarado**

Location Manager  
San Ciprián Smelter  
and Refinery, Spain

*"Meeting the needs of current and future generations can only be achieved with a personal commitment to this goal at all levels."*

human rights policy, extending Alcoa's safety value to suppliers, and implementing a supplier diversity program that encourages diverse companies to develop relationships with Alcoa.

We do face challenges in our procurement efforts. These include managing a globally diverse portfolio of spend; fluctuating commodity markets; changing business conditions and requirements with acquisitions and divestitures; conducting business in emerging markets like Russia and China; establishing and managing globally consistent business controls and practices; and balancing near-term business needs with long-term company and organization requirements.

# Awards & Recognition

We measure our sustainability progress in many ways, including the awards and recognition we receive from external organizations and those we grant internally to recognize outstanding performance at individual, team, and organizational levels.

Here are a few examples of corporate-wide awards we earned in 2007 and early 2008. A complete listing of internal and external awards can be found on [www.alcoa.com](http://www.alcoa.com) under Sustainability.

2008

**One of the Most Sustainable Corporations in the World**  
Corporate Knights and Innovest

**2008 Most Admired Companies**  
Fortune Magazine

2007

**Dow Jones Sustainability Index**  
(*sixth year*)

**Blue-Ribbon Company**  
Fortune Magazine

**Best in Class Status for Environmental and Social Performance in the Metals and Mining Industry**  
Storebrand Investments

**Best in Class for Climate Change Disclosure and Member of Climate Disclosure Leadership Index**  
Carbon Disclosure Project

**R&D 100 Award**  
R&D Magazine

**One of the World's Most Ethical Companies**  
Ethisphere Magazine

**2007 Most Admired Companies**  
Fortune Magazine

**One of the World's Top 50 Low-Carbon Pioneers (#3)**  
CNBC European Business

**One of the Most Sustainable Corporations in the World**  
Corporate Knights and Innovest

**Top Ten Company**  
2006 Covalence Ethical Ranking

## Case Study

### Alcoa CSI Colombia Earns Highest Social Responsibility Rating from Coca-Cola

Following a third-party assessment of its performance against basic human rights and labor standards for customer Coca-Cola, the Alcoa Closure Systems International (CSI) facility in Colombia earned the highest rating available and a spot at the top of the global beverage manufacturer's chain of suppliers.

Coca-Cola's Supplier Guiding Principles (SGP) are a vital pillar of the company's workplace accountability programs. These programs are driven by the belief that good corporate citizenship is essential to the company's long-term business success and must be reflected in its relationships and actions in its own workplaces and those of its authorized suppliers. The

company routinely uses independent third parties to assess suppliers' compliance with the SGP.

Two employees from independent assessor Cal Safety Compliance Corporation (CSCC) visited the Alcoa CSI Colombia facility in October 2006 for an initial SGP onsite audit.

The auditors spent one day at the facility, conducting random and scheduled meetings with employees, touring the facility, and reviewing documentation. The facility was notified of the audit 15 days prior to its start.

All of the companies audited for Coca-Cola are done so under the same grading matrix, which transforms facts and data into a measurable system. A green grade, like that received by the Alcoa facility, is the highest a company can earn.



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