Alcoa and Environmental Sustainability

› An Outstanding Opportunity
Worldwide Operating Locations

- 61% in North America
- 23% in Europe
- 10% in Asia
- 6% in South America

- 131,000 Alcoans
- 350 Operating Locations
- 43 Countries
- $23.5 Billion in Revenue
## What is Alcoa today?

### Our Vision
Alcoa aspires to be the best company in the world

### Our Goals
- Live our Values
- Top-Quintile ROC
- Strong Balance Sheet

### Who are we?
We are a global premium manufacturing company with a diversified portfolio in base metals & mining, engineered customer solutions, and packaging.

Our businesses fall in four segments:
- Upstream
- Aluminum conversion
- Engineered products
- Packaging

### Who are our customers?
Our customers are generally large, global corporations that demand the very best in quality, service and price.

The top 100 customers generate 50% of total revenues and 60% of profits.

Our principal markets are:
- Aerospace
- Automotive
- Commercial Transportation
- Packaging

### What are our competencies?
- Deploying our Value & Business System globally
- Investing for the long-term (bauxite, energy)
- Operating large, complex assets in an integrated system on a global scale
- Developing aluminum product & process technology with deep understanding of end-use applications
Environmental management within Alcoa

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

Corporate Vision
- EHS Value
- EHS Policy
- EHS Principles
- Regulatory Compliance
- 2020 Strategy
- Standards & Procedures/Documentation
- Protocols
- Self-Assessment (ASAT)
- Audits/Verification
- Balanced Scorecard Goals
- Measure Results
- Education & Training
- Benchmark – inside and out
- Real-time incident reporting
- Incident Investigation
- Communication
- Recognition/Consequences
- Organize for Results

2020 EHS Strategy:
- Zero Emissions
- Zero Wastes
- Zero Discharge
- Zero Incidents
- Zero Non-Compliance
- Support Growth
- Sustainability—no legacies
- Enhance the Reputation
- Lead the Way

External Verification:
The WEC Award
The Ron Brown Award
The Dow Jones Sustainability Index
The Domini Index
Innovest—Green Company Designation
Named one of three most sustainable companies in the world at Davos in 2005
Corporate Certification to ISO14001 in 2003
Alcoa Sustainability Model

ABS
- People – linchpin the system
- Products – make to use
- Processes – eliminate waste

Social Responsibility

Environmental Excellence
- Values
  - Integrity
  - Environment Health & Safety
  - Customer
  - Excellence
  - People
  - Profitability
  - Accountability

Economic Performance

Governance

Stakeholders
- Employees
- Communities
- Shareholders
- Customers
- Suppliers
- Partners
- ...
Significant Environmental Issues

- Regulatory expectations
- Customer expectations
- Expectations of the Public, including the communities where we operate
- Expectations of investors and other stakeholders
A Few Examples

Global Climate Change
Energy constraints
The growing water crisis
The growing concerns about bio-accumulative materials
Materials Use and Recycling
Land Use concerns
Communication and reporting issues (internal and external)
Sustainability
Sustainable Development is the basis for the Alcoa Environmental Strategy . . .

Respect for our neighbors and respect for the generations that will follow

- Elimination of All Waste
- Products Designed for the Environment
- Integration of Environment with Manufacturing
- Incident-Free Workplace
- Environment as a Core Value
- Reputation
## Elimination of Wastes

<table>
<thead>
<tr>
<th></th>
<th><strong>60% Reduction</strong></th>
<th></th>
<th><strong>50% Reduction</strong></th>
<th></th>
<th><strong>30% Reduction</strong></th>
<th></th>
<th><strong>80% Reduction</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SO₂</strong></td>
<td>TODAY: 287,000 tons</td>
<td>2010: 108,700 tons</td>
<td></td>
<td>TODAY: 10,910 tons</td>
<td>2008: 5,480 tons</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NOₓ</strong></td>
<td>TODAY: 56,300 tons</td>
<td>2007: 47,770 tons</td>
<td></td>
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<tr>
<td></td>
<td>75% with inert anodes</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>VOCs</strong></td>
<td>TODAY: 10,910 tons</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MERCURY</strong></td>
<td>TODAY: 2,990 kgs</td>
<td></td>
<td></td>
<td></td>
<td>2008: 620 kgs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Alcoa’s Greenhouse Gas Reduction Targets

<table>
<thead>
<tr>
<th>Reduction Target</th>
<th>1990</th>
<th>2010 (projected)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25% Reduction</td>
<td>48.056 M tons</td>
<td>35.950 M tons</td>
</tr>
<tr>
<td>Today</td>
<td>37.222 M tons</td>
<td></td>
</tr>
<tr>
<td>2010 (projected)</td>
<td></td>
<td>23.191 M tons</td>
</tr>
</tbody>
</table>

- **25% REDUCTION**
  - 1990: 48.056 M tons
  - TODAY: 37.222 M tons
  - 2010 (projected): 35.950 M tons

- **50% REDUCTION**
  - With inert anode
  - 2010 (projected): 23.191 M tons
Plans to reduce wastes to landfills by 50% by 2007 . . . on the way to elimination of all landfilled wastes by 2015

Reduction of process water use by 60% by 2008 . . . on the way to achieving zero process water discharge and “near zero” storm water discharge by 2015
Products Designed for the Environment

- Increased commitments for recycling
  . . . aluminum, plastics, other materials

- Encourage customer and supplier interactions on Environmental issues and product design/recycling

- Follow AFL an Alcoa business that is initiating an Environmental Product Stewardship program

- Make increased use of Life Cycle Analysis, for Alcoa and our customers.
Reputation

All BUs will use Alcoa’s New Community Framework for improved management of Environmental issues.

We are improving working relationships with regulators and partnerships with non-government organizations.

By 2004, BU and Corporate Sustainability Reports will use the Global Reporting Initiative Guidelines.
By 2006 Alcoa will achieve annual energy and Environmental cost reductions of $100 Million... and much more is possible.
Alcoa Businesses Are Doing It!

Primary Metals
90% sulfur dioxide (SO$_2$) reduction

North American Extrusions
initiating Energy Alert programs

Alcoa Brazil
100% certification to ISO 14001

AFL
initiating Product Stewardship programs

Alcoa Europe
95% volatile organic compound reduction

AWA
10% reduction in Greenhouse Gas emissions per tonne
Some Current Environmental Goals

Progress towards 2020 Vision
% Reduction from Baseline

Blue represents targets for 2008-2010 for the parameters
Green represents the progress through 2004

LANDFILLED WASTE

<table>
<thead>
<tr>
<th>Year</th>
<th>Baseline</th>
<th>Target</th>
<th>Actual</th>
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</thead>
<tbody>
<tr>
<td>2001</td>
<td>37.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>38.5%</td>
<td></td>
<td></td>
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<tr>
<td>2003</td>
<td>44.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>57.0%</td>
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WATER USE
Goal: 60% reduction in process water use, and discharge by 2008.

<table>
<thead>
<tr>
<th>Year</th>
<th>Baseline</th>
<th>Target</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>5.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>4.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>11.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>15.4%</td>
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2020 Environmental Vision

CURRENT TARGETS
From base year 2000:
• 60% reduction S02 by 2010
• 50% reduction volatile organic compounds by 2008
• 30% reduction nitrogen oxides by 2007
• 80% reduction mercury emissions by 2008
• 50% reduction landfill waste by 2007
• 60% reduction in process water use, and discharge, by 2008
From base year 1990:
• 25% reduction in greenhouse gas emissions by 2010.
• (50% Assuming success with inert anode technology)

Implement effective environmental management systems, such as ISO 14001, at all locations by 2005
Zero environmental non-compliance incidents by 2005
$100 million annual environmental and energy cost savings by 2006 through elimination of wastes and design for sustainability

Environmental CHALLENGE
For Alcoa on the road to Sustainability
60% reduction by 2010
50% reduction by 2015
50% reduction by 2015
90% reduction by 2010
100% reduction by 2015
Zero water discharge by 2015, including storm water

LONG TERM GOALS
90% reduction by 2015
95% reduction by 2015
85% reduction by 2015
95% reduction by 2010
100% reduction by 2015
70% reduction by 2010

10% less material use by 2010
Utilize 25% recycled aluminum in fabricated products by 2010
Reduce energy intensity by 10% by 2010

Environmental targets and community relationship objectives incorporated into all Alcoa businesses' annual plans.
What Else Is Needed?

Engage all Alcoa employees and use their creativity and innovation.

Abandon the “business-as-usual” approach . . . end-of-pipe solutions don’t solve problems or save money -- in fact, they do the opposite.

Use the full power of the Alcoa Business System.

New and creative interaction with communities, regulators and non-government organizations.

Alcoa must be the best company in each community before Alcoa can be the best company in the world.
What can be learned from Alcoa?

We set difficult goals…..

and then we meet them…..

It does not happen easily…it requires training, communication, resources, commitment, creativity and dedication.

…..and the engagement of 131,000 people
My Policy Recommendations

- Aim for transparency in all policy options
- Articulate goals very clearly
- Provide options for achieving the goals
- Benchmark the “best” and most effective
- Be very selective in what you want to accomplish (the goals you select and the milestones that you use to monitor progress will drive behaviors and shape attitudes, support and acceptance)
- Put metrics in place that are understood by all stakeholders
- Monitor and report openly and frequently
- Engage the entire community, make as many as possible feel that they are a part of the program
- Celebrate all progress