



Taking
action

Challenges and Opportunities:

- Energy
- Climate Change
- Natural Resource Stewardship
- Community Development
- Well-Being
- Environmental Releases
- Innovation and Industry Shifts
- Product Stewardship



About This Report 1
CEO Message 2
Company Profile 4
 Bauxite and Alumina 6
 Primary Metal 7
 Engineered Products 8
 Packaging 9
Managing for Sustainability 10
Sustainability Steering Team 10
Sustainability Framework 11
Buildings Blocks 11
Integrating Sustainability 12
External Engagement 15
Awards and Recognition for Sustainability 17
Corporate Governance 18

Taking
actign

The Alcan 8
Energy 20
Climate Change 26
Natural Resource Stewardship 32
Community Development 38
Well-Being 44
Environmental Releases 50
Innovation and Industry Shifts 60
Product Stewardship 66

Performance Data Summary 72
Global Compact 73
GRI Index 74
Glossary 75
Tell Us What You Think

OUR INTERPRETATION OF SUSTAINABILITY CONSISTS OF A THREE-PRONGED, SIMULTANEOUS APPROACH:

- **Think broadly about issues and impacts**

By analyzing our social, economic, and environmental impacts and the wide range of issues that are important to our stakeholders, we can open our Company to new opportunities and make choices that optimize the value created for Alcan and society.

- **Engage and partner**

Engaging an increasingly diverse range of stakeholders in traditional and innovative ways will provide valuable insight into business opportunities and risks. Developing partnerships with a variety of stakeholders will provide more effective approaches to addressing issues of mutual importance.

- **Make connections across our business, and integrate sustainability into our business**

Examining the points of leverage in our business processes and incorporating a sustainability perspective help to ensure that our decisions and actions are consistent with our sustainability-driven concept of value.

ABOUT THIS REPORT

The Alcan Sustainability Report 2005, includes performance data from calendar year 2004 and references to certain key initiatives in early 2005. Due to the spin-off of the majority of Alcan's rolled products assets into a new company, Novelis, as of January 2005, this report includes discussion and examples from Alcan's current business groups: Bauxite and Alumina, Primary Metal, Engineered Products and Alcan Packaging.

With the integration of Pechiney in 2004, all examples and data from former Pechiney operations are included in 2004 data and referred to as part of Alcan Inc. The performance data reflects Alcan Inc. operations worldwide, except where noted. For a detailed overview of Alcan's geographic and market presence, please refer to *Alcan Facts 2005* available at www.alcan.com.

Where required, notations on various charts and graphs have been added to explain trend shifts as a result of the Pechiney acquisition. In the case of joint ventures, the performance data is adjusted to reflect Alcan's level of participation in the venture. The manner in which it is adjusted is noted in the data, as there is variation in the methods that are used. Any restatements to data reported in previous years are discussed in notes to data charts. All financial data is reported in U.S. dollars unless specified otherwise with local currency indicated. All references to tonnes are in measurements of metric tonnes.

This report follows the guidelines set out by the Global Reporting Initiative (GRI), to the extent that we have felt it possible to do so. All information in this report has been reviewed at senior levels and by the relevant functional specialists. Alcan undertakes a variety of audit and assurance activities on data and information that is used in this report, including financial, environment, health and safety (EHS) performance, management system and compliance audits. Both internal and external parties conduct and/or participate in these activities. When using internal personnel, independence is achieved by including participants from other businesses in the company, providing a degree of separation of interest.

The print version of the Alcan Sustainability Report 2005 is a summary of the Web-based version released in August 2005 at www.alcan.com/SR05. This is the fourth annual Sustainability Report produced by Alcan.

Data Consolidation Notes:

All figures included in this report represent real holdings over time. Hence, reported totals are the sum of events, emissions, production, etc. for each year based on Alcan Inc. holdings for the given year. Data from acquired sites is included from the date of acquisition. Health and Safety data excludes joint ventures where Alcan holdings are less than 50%. Greenhouse gas and energy figures include contributions from all joint ventures based on percentage of ownership, regardless of management control over the facility.

Any exceptions to the above are explicitly referenced with the relevant figure.

Tell Us What You Think

We welcome your feedback on this report. A brief survey is available at the end of this report and at www.alcan.com/SR05. You can also send or fax your comments to:

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CEO MESSAGE

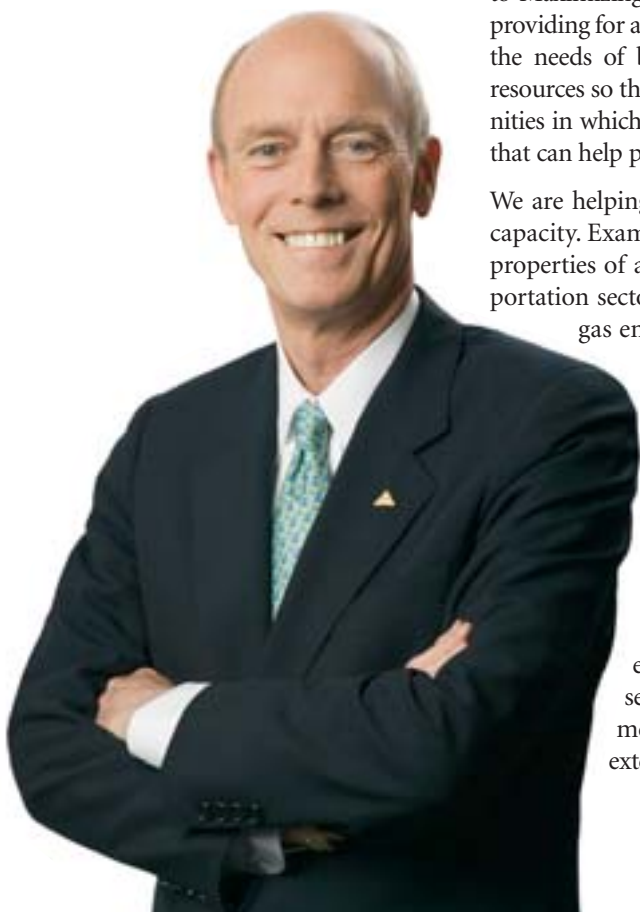
Each year that we publish the Alcan Sustainability Report, I see an even greater demonstration of our company-wide commitment to maximizing value for all stakeholders. Our economic success is driven by our skilled and knowledgeable employees and their dedication to Alcan's long-term sustainability as an industry leader and community partner. In turn, this very commitment allows us to discover new opportunities and develop innovative product applications that are the essence of our profitable growth. We are focused on driving value at all levels by interacting with employees, communities, customers, suppliers, governments and other interested parties to ensure that Alcan grows responsibly and for the long term.

In last year's report, I spoke of *Taking the Next Step*, which was to "operationalize" sustainability at Alcan. The theme of this year's report is **Taking Action**, and I hope that you will see, as I do, that we are doing just that – sustainability is becoming an integral part of Alcan's decision-making processes. You will see how we are translating this sustainability commitment into concrete actions, whether it is in the company-wide implementation of *EHS FIRST* and Continuous Improvement, working with customers and suppliers to apply life cycle thinking to product design, or engaging with local partners to ensure mutual benefits from our presence in their communities.

I think our shareholders now understand that a global industry leader in the 21st century cannot be driven by economic success alone. We are proving that sustainability is essential to Maximizing Value. The world faces enormous sustainability challenges, among them providing for a growing population while managing natural resources responsibly, meeting the needs of burgeoning megacities, addressing climate change, and protecting water resources so they can be used sustainably into the future. Our customers and the communities in which we operate care about these issues and are seeking solutions and partners that can help provide them.

We are helping to meet these challenges through our unique products and innovative capacity. Examples in this report include market opportunities based upon the unique properties of aluminum, such as lightweight applications in the automotive and transportation sectors that result in energy savings and the reduction of related greenhouse gas emissions. Furthermore, you will see how aluminum's recyclability is an important aspect of product stewardship in that it represents continuous reuse at a fraction of the energy required for primary metal production, thereby conserving natural resources and reducing landfill waste.

Alcan's commitment extends beyond merely complying with regulations, managing risks and limiting adverse impacts. I believe that building a successful company is directly tied to contributing to the economic, social and environmental well-being of the communities in which it operates. In terms of Alcan's business approach, this means thinking through the impact of our decisions to determine not only whether a given action will enhance our profitability, but also whether it will add value in a broader sense. Sustainability is an integral part of managing for value – from our mergers and acquisitions to our everyday operations and relationships with external stakeholders.

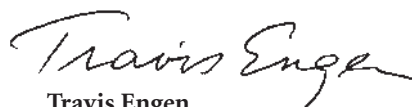


In 2004, we reinforced this approach by integrating our business management systems into the Alcan Integrated Management System (AIMS). With AIMS, three key corporate building blocks are now interconnected: Value-Based Management, *EHS FIRST*, and Continuous Improvement. The integration of these elements provides the foundation for our sustainability business model that, along with our corporate values, will propel this company forward in pursuit of its governing objective of Maximizing Value.

Throughout the year, we also continued to engage with a wide variety of stakeholders at all levels, from local community “open house” days to international engagements focused on global issues and challenges. We joined the United Nations Global Compact, an ongoing commitment that has already helped us to focus our strategy to “operationalize” sustainability at Alcan. And I was privileged to co-chair the WBCSD Working Group on Accountability and Reporting, as well as the World Economic Forum’s Water Initiative. Among the various external involvements that we had in 2004, I was especially pleased to represent Alcan in working alongside 23 other international businesses in the G8 Climate Change Roundtable. Issues like climate change are global concerns that require global solutions based on global dialogue.

An exciting step for Alcan in 2004 was the creation of the \$1 million Alcan Prize for Sustainability to recognize outstanding contributions from non-governmental organizations to the cause of global sustainability. A flood of nominations was received from 79 countries and the first annual prize was subsequently awarded in January 2005 to the Forest Stewardship Council based in Bonn, Germany. Creating the Alcan Prize for Sustainability underscores our commitment to sustainability, and it also highlights the value of encouraging stronger linkages among the many organizations, from business and government to the not-for-profit sector, that are working on the challenge of sustainable development around the world.

Sustainability relies on long-term economic, social and environmental partnerships. Our emerging sustainable business model supports such partnerships and is fundamental to our profitable growth and to creating value for Alcan’s stakeholders, hopefully setting an example for others to follow.



Travis Engen
President and CEO
Alcan Inc.

COMPANY PROFILE

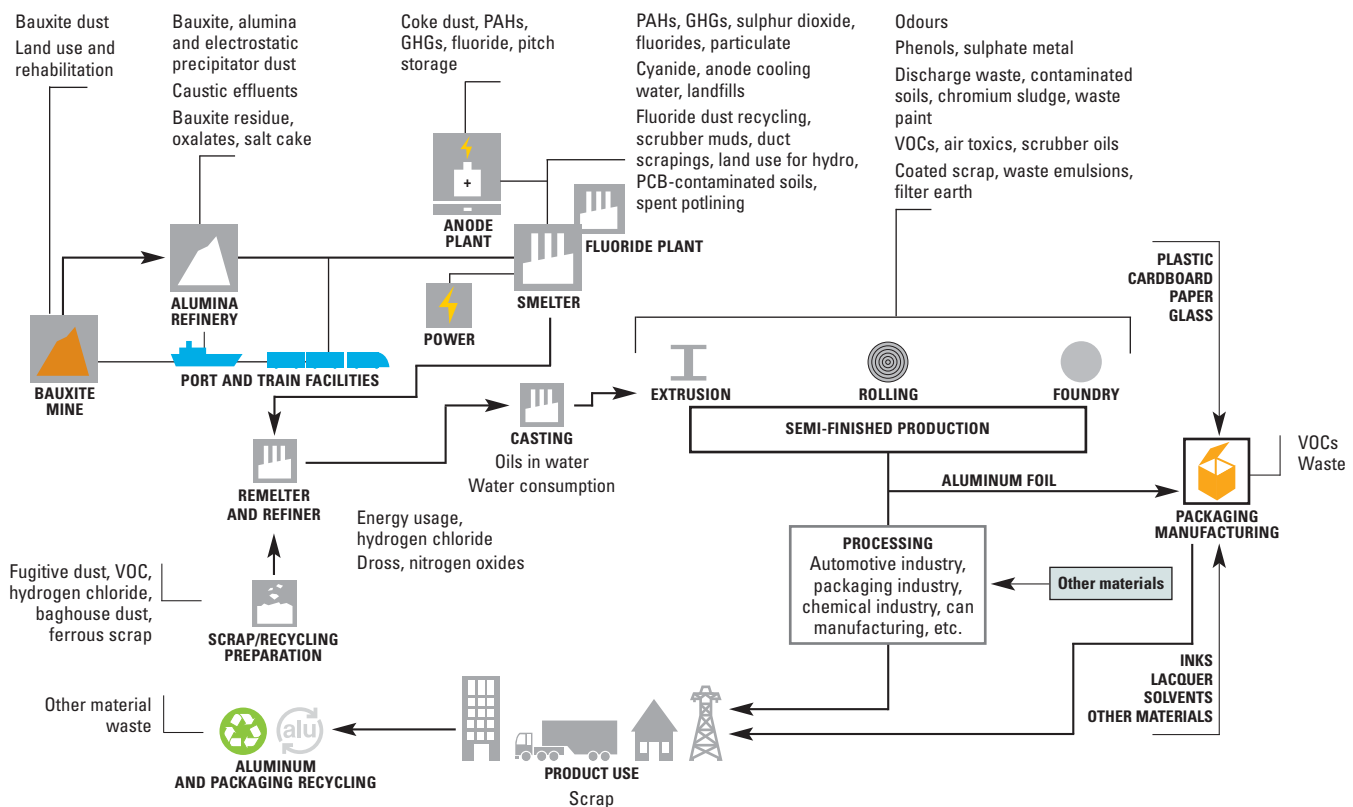
Alcan is a dynamic, multicultural organization and a leading advocate for promoting sustainability as the key to value creation and long-term growth. As a supplier of raw materials – bauxite, alumina and aluminum – and a producer of finished products – engineered and packaging – Alcan maintains predominant positions in the major market regions of the Americas, Europe and Asia.

With Maximizing Value as its governing objective, Alcan began implementing its Alcan Integrated Management System (AIMS) in 2004 to ensure that the same focus on value-based management, continuous improvement and environment, health and safety is found in each of the Company’s operations, regardless of business focus or geographic location. AIMS facilitates the sharing of best practices and reinforces Alcan’s capacity to be the best in its chosen businesses.

Alcan has more than 500 operating facilities in 55 countries and regions with some 70,000 employees. Operations are organized in four business groups: Bauxite and Alumina, Primary Metal, Engineered Products, and Packaging. Headquartered in Montreal, Canada, Alcan is a public company traded on the Toronto, New York, London, Paris and Swiss stock exchanges with pro-forma revenues (excluding Novelis) of approximately \$19.5 billion.

The process flow diagrams shown below identify major environmental, health, safety and community aspects associated with our operations.

ENVIRONMENTAL ASPECTS



SOME WASTE AND/OR REUSABLE BY-PRODUCTS ARE GENERATED BY OUR FACILITIES.
This chart provides an overview of major aspects and is not intended to be a comprehensive list.

NORTH AMERICA

Number of sites **136**
Employees **24,000**



EUROPE

Number of sites **253**
Employees **34,500**



WORLDWIDE PRESENCE

ASIA/PACIFIC AND ALL OTHERS

Number of sites **65**
Employees **8,100**

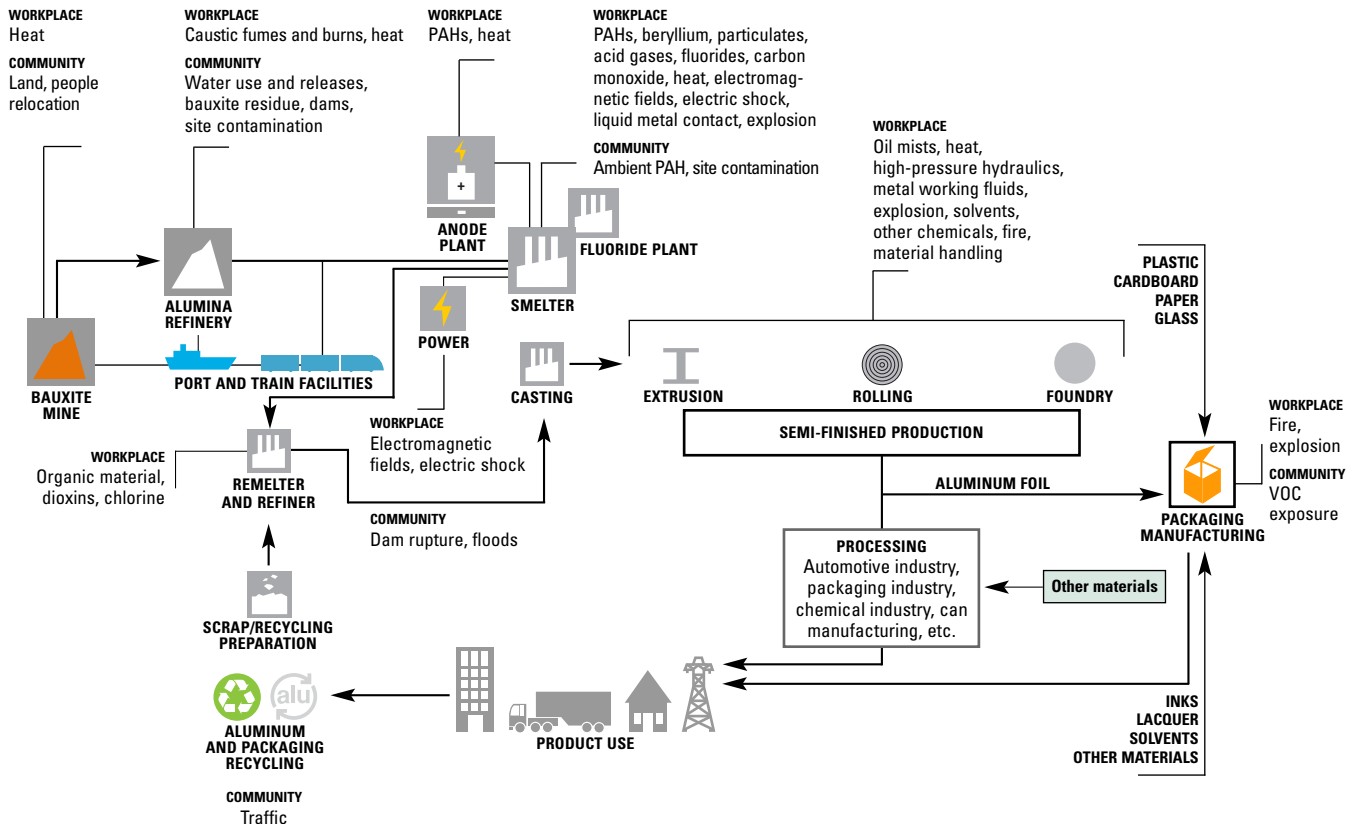


SOUTH AMERICA

Number of sites **25**
Employees **2,400**



HEALTH, SAFETY AND COMMUNITY ASPECTS



SOME WASTE AND/OR REUSABLE BY-PRODUCTS ARE GENERATED BY OUR FACILITIES.

Common to all: noise, dust, mobile equipment, cranes and lifting devices

This chart provides an overview of major aspects and is not intended to be a comprehensive list. Although the above issues are representative, not all are addressed in this report.

BAUXITE AND ALUMINA

Bauxite stock pile area
in Gove, Australia.



Alcan's Bauxite and Alumina group represents a global network of bauxite mines and alumina refineries that produce smelter-grade and specialty aluminas. Under the Bauxite and Alumina group, the Company also owns/leases and operates a global transportation network that includes rail systems, freight trains, bulk cargo vessels and port facilities.

Stakeholder engagement is a business priority for the Bauxite and Alumina group as illustrated by its commitment to sustainable business practices around the globe, frequently in remote locations. Best business practices are employed in all aspects of its operations, from energy consumption and environmental releases to natural resource stewardship and community development. Sustainability is embodied in the group's commitment to managing its resources more efficiently.

In 2004, the group developed a five-year *EHS FIRST* strategic plan that includes initiatives related to bauxite residue management, energy and GHG management, biodiversity, land and water conservation, employee health and safety, fatality prevention and other EHS-related activities. In bauxite mining, the group is focused on minimizing the "footprint" of its operations through ongoing land rehabilitation to return sites to an equal or better state than they were before mining operations began. In alumina production, where bauxite residue is the largest concern of producers due to its volume and alkalinity, the group is building on its efforts to improve disposal technologies and to find alternative commercial, sustainable solutions. Success in these key areas is vital to sustainability and to preserving the group's formal and informal licence to operate and grow.

Sustainability Priorities

- As a global leader in alumina production, as well as in the sale of technology and technical assistance for alumina processing, the Bauxite and Alumina group aims to: reduce air emissions; protect water and marine resources; rehabilitate mines and residue disposal sites; and protect and promote employee as well as community health.
- Maximize value by continually improving the portfolio of assets through expansion, technology and process upgrades, and acquisition of large-scale, cost-advantaged assets. For example, in tandem with the start-up of a \$1.3 billion expansion at Gove in Australia, the group is focused on delivering natural gas to Gove, replacing imported oil as the primary energy source. Delivery of natural gas, which is expected by 2009, would ensure a secure, economical and long-term energy source for the refinery, have a positive environmental impact as well as provide opportunities for new and existing businesses in the Northern Territory and the Queensland states.



Operator taking a metal sample at the Alma Works in Quebec, Canada.

PRIMARY METAL

The Primary Metal group encompasses all of Alcan's aluminum smelting and related facilities, power generation installations as well as technological and engineering expertise. The group produces value-added aluminum sheet ingot, extrusion ingot, rod and foundry ingot. The group sells the most modern aluminum technology and manufactures ECL™ cranes used worldwide in the aluminum industry.

Alcan has taken a leadership role within the primary aluminum industry and is recognized worldwide for promoting sustainability as a fundamental business concept. This approach complements the Primary Metal group strategy that recognizes the need to consider the interests of its diverse stakeholders during the decision-making process. Among the key elements of the Primary Metal group's contribution to Alcan's sustainability is the embedding of the *EHS FIRST* culture across the organization in the last four years and the strong commitment from management to further integrate environment, health and safety at operational and functional levels. This will be achieved through the adoption and implementation of the 2006-2010 EHS Strategic Plan and priorities. This commitment includes the health and safety of its workforce and communities as well as improvements in processes or procedures aimed at reducing or eliminating any releases to the environment related to its operations.

Since its inception, Alcan's substantial investment in clean, renewable hydroelectric power has provided a competitive edge that avoids GHG emissions in the Primary Metal group. By the nature of such operations, this includes a corporate responsibility to monitor and manage watersheds, respective habitats and communities. The sharing of best practices has minimized environmental releases and improved EHS performance in Primary Metal facilities. The group's commitment to sustainability is evident in actions such as fighting HIV in remote locations, researching lung and bladder disease, partnering in cooperative projects with First Nations communities, reducing occupational polycyclic aromatic hydrocarbons (PAH) exposure, improving practices related to the use of overhead cranes and mobile equipment and encouraging industrial diversification, such as in the Saguenay–Lac-Saint-Jean region of Quebec, Canada.

The Primary Metal group has now established a Business Group Steering Team and network for sustainability. Sustainability concepts are being integrated into ongoing value based projects and in key functions across the group (e.g., Human Resources, Procurement, Research and Development).

Sustainability Priorities

- Continue to seek out sustainable value-creating opportunities that include investment in existing facilities, expansion into countries like China and Oman, and promoting the advantages of Alcan's industry-leading smelting technologies to aluminum producers worldwide.
- Monitor the impact of operations on the various stakeholder groups and implement policies, processes and procedures to reduce environmental releases; optimize the use of resources and raw materials (including energy and water in processes); improve well-being and address social and economic aspects related to the evolution of Alcan operations and the global industry. This includes cooperative initiatives with governments, NGOs and third parties to ensure long-term sustainability.
- Promote Alcan's role as an active participant in the social and economic development of regions and communities in which it operates, especially in closures or realignment of Alcan resources.

With its unparalleled range of advanced lightweight materials, Alcan is making an important contribution to the technological progress of sustainable wind power generation.



ENGINEERED PRODUCTS

Alcan's Engineered Products group is a world leader in fabricated aluminum and composite products, providing customized and cost-effective solutions for the global marketplace. Products include automotive structures, sheet and plate for the aerospace and transportation sectors, electrical conductor cable, and aluminum components and composite panel products for the construction and architectural markets. The product portfolio also includes numerous industrial applications.

Sustainability is a cornerstone of Engineered Products' strategy as the business group expands existing markets and develops new products and applications. Efforts to examine and identify energy and aspects of GHG throughout a product's life cycle are helping customers to address concerns about energy costs and greenhouse gas emissions. This value is especially apparent when lightweight aluminum solutions and composite materials are used in place of traditional, heavier materials. Many examples can be found in industries such as transportation, aerospace, automotive, marine and alternate energy (windmill) applications.

Since the introduction of *EHS FIRST*, tremendous progress has been made in the Engineered Products group in environment, health and safety due to the high degree of commitment from management and specialists. The integration of Pechiney not only brought many new members to the Alcan family but also many challenges. Numerous sites have been taking a holistic approach by combining their efforts to implement the rigorous *EHS FIRST* requirements with their planned certification to the international standards ISO 14001 and OHSAS 18001 by the end of 2005.

A long-standing emphasis on research and development in Alcan Engineered Products has resulted in the creation of innovative new alloys and fabrication processes, with particular success and relevance in the aerospace sector. Engineered Products will continue to strengthen its efforts in these areas, taking into account that all decisions must reflect economic, environmental and social responsibility.

Sustainability Priorities

- Develop markets that capitalize on the sustainability benefits inherent in the group's products, including enhanced customer support in adopting lightweight solutions for road, rail, marine and air transportation applications. This helps reduce greenhouse gas emissions and saves energy.
- Promote product development in composites and innovations in Engineered Products applications and processes through various R&D initiatives.
- Promote sustainable operational practices to maximize recycling, reduce raw materials consumption, and intensify waste treatment efforts.

PACKAGING

Sustainability Priorities

- Deliver the highest quality packaging products and services in a customer-driven culture, with an emphasis on reducing packaging material content and weight.
- Design packaging products that respond to the evolving needs of society for solutions that remain easy to use but that prevent product counterfeiting and offer innovations for consumer safety in areas such as child-resistant and tamper-evident containers.
- Develop packaging solutions that eliminate harmful chemical components or additives during the manufacturing process and minimize the environmental impact of the packaging after use.

Alcan is recognized as a world leader in the end-use markets for food, pharmaceutical, beauty and tobacco packaging. The group offers a multi-material approach to providing innovative solutions to customer needs. Plastic is the base material and accounts for approximately 59% of the group's business, followed by aluminum (26%). Other materials used either alone or in combination include paper, paperboard, glass and steel.

The sustainability focus in the Alcan Packaging group is most apparent in its commitment to seek out advanced packaging solutions that satisfy customer expectations, while supporting sustainable product development and minimizing environmental impacts. Reducing air emissions, particularly volatile organic compounds, remains an important concern while reducing process waste contributes to resource conservation and improved operating costs. Senior management is actively involved in the deployment of *EHS FIRST* in Alcan Packaging with efforts such as Management Safety Operational Tours at all plants. This behavioural audit program encourages employees at all levels to analyze their work practices from a safety standpoint and identify appropriate solutions.

Alcan Packaging retains its focus on operating excellence, business portfolio quality and profitable growth. This growth is derived from innovations in existing markets as well as a changing geographic market profile. Research and development activities play an important part in keeping Alcan Packaging at the top of the packaging field. In an industry where interpreting consumer and societal trends is the rule, the capacity to innovate and implement quickly are key factors to success.



MANAGING FOR SUSTAINABILITY

Building a successful, global and sustainable company involves maximizing value for all our stakeholders, especially by making a significant contribution – through the way we do business and the products we make – to the economic, social and environmental well-being of the communities in which we operate.

Alcan has a vital role to play in reducing environmental releases, conserving natural resources and ensuring healthy and safe communities and workplaces.

Together with concerned stakeholders, governments, employees, shareholders and customers, we are pursuing business opportunities that strengthen Alcan's position in all aspects of its business to provide a prosperous and sustainable environment for future generations.

Managing for Sustainability

Through its actions, Alcan is proving that building a successful global enterprise is compatible with making a significant contribution to the economic, social and environmental well-being of the communities in which it operates. The Company plays a vital role in developing and providing beneficial products, combatting environmental degradation, conserving natural resources and ensuring safe workplaces. And, Alcan is determined to grow in ways that ensure a sustainable future for generations to come.

Together with business partners, employees, shareholders and customers, Alcan is pursuing business opportunities that will enable it to remain a world leader by continually improving its social, economic and environmental performance.

In pursuing sustainability, Alcan is cultivating new markets and forging new partnerships in sectors ranging from aerospace and mass transportation to alternative energy sources and commercial applications for process residues.

Alcan has developed this approach to sustainability by building on existing management frameworks as much as possible, continually improving in all aspects of its operations. This helps to reinforce a sustainability mindset among all employees in line with Alcan's governing objective of Maximizing Value.

Sustainability Steering Team

Alcan's Sustainability Steering Team was created in 2003 and reports directly to the Executive Committee. Senior business group representatives and corporate functional leaders participate in the Steering Team with an overarching goal of ensuring Alcan's leadership position in sustainability by integrating the concept into the Company's mainstream business strategy and culture.

The Steering Team's strategy addresses six key areas:

- Establishing overall direction for the Company's sustainability approach.
- Identifying the key sustainability issues facing Alcan.
- Setting sustainability goals.
- Integrating sustainability into business decisions, systems and processes.
- Developing internal and external sustainability networks.
- Increasing the transparency of communications.

Actions were undertaken in all these areas in 2004. The Steering Committee met four times to advance the elements of the sustainability strategy and sponsored special sessions in April and August to discuss the sustainability direction, explore key issues and identify opportunities to integrate sustainability into the Company's business systems.

In the April Direction Setting Session, approximately 40 individuals assembled to consider Alcan's sustainability framework and approach. Representing various levels of Alcan management, from business unit presidents to key functional managers, along with industry experts, non-government organizations and supply chain representatives, the participants affirmed the overall approach and identified a range of sustainability issues and opportunities important to the business groups and the organization as a whole.

Following the April meeting, the Pembina Institute, an independent, not-for-profit environmental policy research and education organization, worked with Alcan to review the results of the Direction Setting Session as well as external sources, and the interviewing of key Alcan representatives to develop a proposed set of priority sustainability focus areas.

In the August session, a group of internal and external experts refined and prioritized eight key areas of focus facing Alcan today. Following the session, these focus areas referred to as the "Alcan 8" were presented to and affirmed by Alcan's Sustainability Steering Team:

- Energy
- Climate Change
- Natural Resource Stewardship
- Community Development
- Well-Being
- Environmental Releases
- Innovation and Industry Shifts
- Product Stewardship

By recognizing these eight areas as key factors in addressing sustainability within Alcan, the geographic or business group boundaries have been removed. These company boundaries can sometimes hinder the development of a cohesive and forward-looking global strategy to address an issue company-wide, confront the challenges and identify new opportunities. Although this list will likely evolve over time, it provides a useful framework for considering Alcan's key challenges and opportunities as outlined in this report.

Managing for sustainability at Alcan includes the creation and nurturing of internal networks, whether it is between business groups or within a particular business unit. During 2004, initiatives across business groups and corporate functions were aimed at developing a network of individuals committed to integrating sustainability into the functions under their responsibility. These efforts build on several Alcan cornerstones including its **corporate values (integrity, accountability, trust and transparency, and teamwork)**, the Global Employee Survey and the Alcan Integrated Management System (AIMS).

Building Blocks

Global Employee Survey

The Global Employee Survey is conducted annually at Alcan. The 2004 survey was distributed in August to some 88,000 Alcan employees worldwide. A 58% overall response rate was achieved, especially significant given the preoccupation of employees with the Pechiney integration throughout 2004 and the announcement of the rolled products company spin-off into Novelis Inc. (both of these were covered extensively in the Alcan Sustainability Report 2004).

The 2004 survey showed a high level of support for Alcan's sustainability approach across the Company:

- 79% responded favourably when asked if Alcan's commitment to corporate sustainability was important to the Company's overall business success.
- 79% said the Company's commitment to corporate sustainability was important to them personally.
- 82% indicated that Alcan's investments in environment, health and safety, and the community have a recognized business value.

ALCAN'S SUSTAINABILITY FRAMEWORK



AIMS

The introduction of the Alcan Integrated Management System (AIMS) in 2004 represents an important step in operationalizing sustainability. Three key corporate building blocks are being integrated and applied in a consistent manner throughout Alcan, regardless of business group or geographic location: Value-Based Management, *EHS FIRST* and Continuous Improvement.

The three components of AIMS:

- **Value-Based Management** is the basis for all strategic investment decisions and value-generating initiatives worldwide at Alcan. With rigorous financial discipline, Value-Based Management allows each business group to more fully identify and capitalize on opportunities and make the best use of all available resources.
- ***EHS FIRST*** introduces and strengthens company-wide standards, procedures and the commitment to achieve excellence in environment, health and safety for employees and for the communities where Alcan operates. *EHS FIRST* represents an ironclad commitment from each Alcan employee and from all levels of the organization to improve environmental, health and safety performance. This is being accomplished through increased awareness, knowledge sharing, and by applying best practices in support of world-class EHS performance and excellence at every Alcan site.

As part of *EHS FIRST*, all sites are required to be certified to the OHSAS 18001 occupational health and safety management standard and to the ISO 14001 environmental management standard (see the Alcan 8 section of this report for details on *EHS FIRST* goals and performance).

- **Continuous Improvement** is aimed at maximizing opportunities by improving the Company's competitiveness and efficiency through systematic improvements to processes and operations. Alcan's Continuous Improvement program combines two complementary approaches to provide a full range of tools to its businesses – Lean Manufacturing and Six Sigma.

Advancing quickly in 2004 with over 50% of the rollout completed, approximately 1,400 leaders and sponsors were trained and over 1,000 Continuous Improvement (CI) projects were under way or completed by year-end. Alcan now has a core base of internal CI experts (Master Black Belts) to continue the training in-house. Most CI projects are in the area of cost savings and productivity improvements, and initiatives related to environment, health and safety are promoted and given high priority.

Integrating Sustainability

Identifying opportunities and integrating sustainability into key business processes is a priority area of focus to drive value at Alcan. This includes the appointment of lead sustainability champions within each business group and the creation of internal networks and specific governance models that support this increased focus on sustainability.

Corporate functional groups from Procurement to Human Resources are now adopting a sustainability mindset in their decision-making and development of new initiatives.

Business Group Initiatives

Alcan's business groups are shaping sustainability approaches to reflect their unique issues, challenges and opportunities:

Bauxite and Alumina is developing its business group perspective on sustainability and has established the following key drivers: setting sustainability objectives for business and individual performance; developing communication to increase understanding; developing awareness and an internal organizational structure; applying sustainability considerations in EHS; addressing key issues with a sustainability perspective, including stakeholder engagement, biodiversity, water conservation, and viewing opportunities through a sustainability lens.

Primary Metal has established a Business Group Steering Team and network for sustainability, and is integrating sustainability approaches in ongoing value-based projects and in key functions across the group (e.g., Human Resources, Procurement, Research and Development).

Engineered Products is leveraging sustainability and Life Cycle/Product Stewardship concepts in developing business opportunities and further engaging suppliers and customers in product development and use.

Packaging identifies priority issues using a sustainability perspective, enhancing business systems for risk management, capital allocation, and employee recognition while also testing the applicability of leading-edge methods in product development and product stewardship.

Integration Into Key Functions

A wide range of corporate functions play important roles in weaving sustainability into the fabric of the Company's day-to-day operations. Several functions at Alcan, including Human Resources, Procurement and EHS, have developed innovative approaches by applying sustainability concepts in their areas of responsibility.

Human Resources Initiatives

The Human Resources group commissioned a report on *Measuring Human Resources Sustainability* to determine how Alcan can best develop its HR policy further in this regard. Leadership plays a major role in instilling corporate values, promoting an understanding of objectives and deploying HR practices. This leadership and support is essential to further employee comprehension and application of Human Resources sustainability principles.

Alcan's Human Resources teams play a critical role in creating corporate value and in meeting corporate strategic objectives for sustainable growth. Many elements of human resources and the results of how they are managed contribute to significant intangible value, leading to better productivity and enhanced customer loyalty, thanks to high-quality products and service. This intangible value and corresponding benefits have a compounding effect on the Company's financial value. The Human Resources function is clearly a fundamental component of the overall value chain.

Throughout 2004, Alcan addressed a number of challenges and opportunities aimed at enhancing the role that employees play as the most important organizational resource.

- Work-life effectiveness
- Training
 - Learning Management System platform
 - New Corporate Training Programs for high potential employees
 - Sustainability training program for plant managers
 - E-learning course on Product Stewardship
- New Succession Management module
- Assessment of the Environment for Women at Alcan

Action comes from all parts of the organization and at all levels, as employees increasingly become aware of the value of the Company's sustainability commitment. For example, in recognizing the challenge that many employees face today in terms of work-life balance, the Primary Metal group's Human Resources team created a new work-life effectiveness Program in late 2004. The aim is to increase employee satisfaction, engagement and commitment, while also contributing to improved employee retention and enhanced productivity.

A peer group network is also in place at most of Alcan's facilities in Quebec in recognition of the need for innovative approaches to assist employees in addressing life's difficulties, regardless of whether they are personal or professional in nature. The network has been operating in the workplace over the past eight years to address a range of issues, including mental health, and is a direct complement to Alcan's Employee Assistance Program.

Alcan employees continued to be honoured in 2004 through the Nathanael V. Davis Award, created in 2002 to recognize employees who have made a unique, creative or enduring contribution that generates extraordinary results for the Company named for Nathanael V. Davis, president and CEO of Alcan from 1947 to 1979 and chairman from 1972 to 1986.

> Visit www.alcan.com/SR05 for more details



WORK-LIFE EFFECTIVENESS PROGRAM AT PRIMARY METAL

A work-life effectiveness program was established at Primary Metal with the aim to develop and promote a resilient and engaged workforce. The aim is to enable employees to integrate work and life in ways that contribute to personal health and well-being, business success and a sustainable work environment.

The first step in measuring program success was to evaluate employee perceptions of work-life balance. The program team also documented the factors that affect work-life balance and the related performance metrics through a benchmarking exercise to identify best practices within other companies.

A definition of work-life effectiveness was proposed through a structured program that is part of *EHS FIRST*. The program, which is supported by Alcan's senior management, focuses on strategies that managers and employees can follow: understanding the work environment, partnering with employees, communicating parameters for success, and, be a role model (provide leadership commitment and support). Coaching sessions for managers are included as well as direct assistance to employees to help them define their own coping mechanisms and the use of Continuous Improvement tools as a means of attaining better workload management.

The program was next initiated within Primary Metal's finance team at corporate headquarters in Montreal, Canada (Maison Alcan) and it will be deployed in other Primary Metal group facilities around the world. Once the program is in place at Primary Metal, the best practices will be transferred in 2005 to all departments within the Bauxite and Alumina group based at Maison Alcan.

The emphasis of the first year is workload management (eliminating excessive overtime and non-value adding work).

SUSTAINABILITY – A RETURN ON INVESTMENT

Creating value provides us with the means to contribute to the economic, environmental and social dimensions of our corporate sustainability. Increased awareness of these issues is fundamental to identifying new business opportunities, further maximizing value within our business.

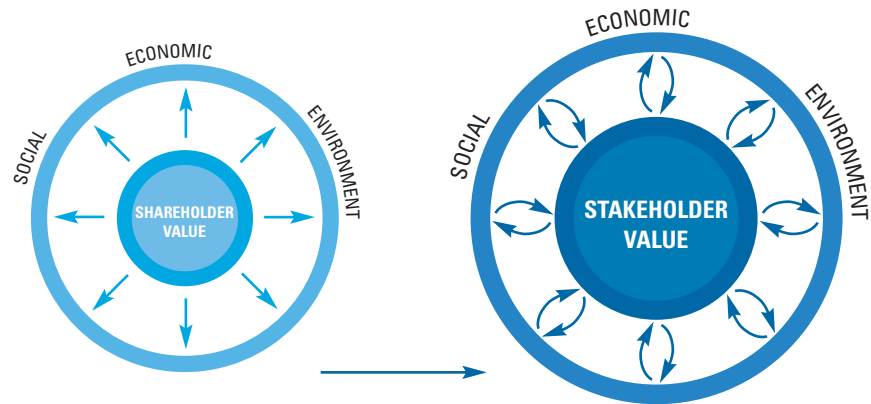
LOGISTICS SOLUTION ADDS VALUE

The procurement team played a large role in helping the Engineered Products extrusion plant in Ham, France deal with a logistics problem that included multiple loading gates, long waiting times and long loading times. After testing different solutions without much success, plant management assigned a mandate to their procurement team to solve the problem.

A logistics optimization project was launched with a cross-functional team made up of representatives of the commercial department, the three workshops and the logistic and transportation department. Solutions included establishing a separate transportation department with responsibility for the daily loading plan and links to the procurement group, increased loading dock flexibility and the introduction of new carriers.

The measures resulted in a major reduction of loading times, with more than 35% of truckloads completed in four hours or less, and new carrier loyalty. Finally, the improvements reduced costs by more than US\$120,000.

Examples of Procurement engagement efforts with suppliers are found in the following section.



Procurement Drive for Excellence

Given that the nature of the procurement function requires engagement with both internal and external stakeholders, Alcan's procurement teams were among the first to integrate sustainability into their day-to-day business decisions. A key feature in the procurement approach is the Total Value Opportunity concept, or TVO™, they have pioneered. Through TVO™, procurement is capturing value and addressing environmental, social and other business issues in the supply chain, at the time of purchase, in use and at end-of-life. This drive for procurement excellence continued in early 2005 with the launch of Procurement Value teams in 10 specific categories:

- Consulting services (Global)
- Maintenance services (North America)
- Alloys and metals (Global)
- Road transportation (North America)
- Natural gas (Global)
- Calcined coke (Global)
- Packing materials (Europe)
- Waste treatment and environment (Global)
- Spare parts and industrial supplies (Europe)
- Refractories (Global)

The estimated potential savings of the procurement value projects is some \$90 million, an improvement of almost 10% on an estimated total annual expenditure of approximately \$1 billion.

Supplier Engagement

Working with suppliers is an important aspect of preserving the sustainability value chain. For instance, a strategy is in place in the Primary Metal group to maximize value with suppliers and contractors. The aim is to encourage the development of mutually beneficial relationships with preferred suppliers who “buy in” to Alcan's value-based approach and are clearly committed to helping achieve Alcan's governing objective and address EHS challenges.

With less emphasis on traditional procurement or “purchasing” practices, a multidisciplinary approach is favoured that provides a coordinated interface between suppliers and the end users of products and services in the group.

To promote this approach, supplier events were held during 2004, including one in the U.K. with more than 100 executives and technical managers of major Alcan suppliers participating, and one in Montreal, Canada where 130 representatives participated. Suppliers were sensitized to Alcan's governing objective and EHS challenges, and they were also encouraged to propose ideas to add value in whatever manner possible. A website was launched for suppliers to contribute ideas for value improvements and more than 135 suppliers have already registered.

Maximizing value with suppliers at Alcan is more than trying to get the best product for the best price. Rather, it is about sustaining value by working closely with suppliers to develop cost-effective solutions while also participating in on-going reviews of products and processes to help drive continuous evolution of the supply chain.

For example, at Alcan's corporate office in Paris, a project was launched to reduce waste paper. This began with employee involvement to separate waste paper to increase the amount recycled and reduce collection and sorting costs in the process. Employees were evaluated on their participation, which will be taken into consideration at their annual performance review. The project quickly evolved to include an examination of usage and an evaluation of alternatives.

With the procurement team's involvement, significant additional savings were achieved through changes to sourcing processes, which included switching to on-line quotations and e-commerce auctions. E-sourcing resulted in saving some 30,000 sheets of paper, the switch to on-line requisitions and invoicing conserved an additional 48,000 sheets, and it is estimated that suppliers saved some 96,000 sheets in their own operations.

Another example of Alcan's procurement excellence is at its ISAL smelter in Iceland where a new system for handling aluminum fluoride has achieved real sustainable improvements in lowering costs, eliminating industrial waste, reducing the amount of steel required for containers, and reducing workforce exposure to dust. > Visit www.alcan.com/SR05 for more details

External engagement

Engaging with stakeholders is a fundamental component of creating a strong sustainability framework for any company. Being aware of the many economic, environmental and social dimensions of its presence propels Alcan to establish dialogue and develop cooperative initiatives with a wide range of stakeholders. And, as a company that takes its role as responsible community partner very seriously, meaningful engagement with external stakeholders is a normal part of Alcan's business approach.

From the high-level involvement of the CEO as vice chairman of the World Business Council for Sustainable Development to local open-house days to demonstrate the Company's commitment to well-being and community development, Alcan is involved at many levels and on many issues. In some cases, it involves various community stakeholders surrounding long-standing operations such as at Kitimat-Kemano, British Columbia,

Canada, where the Company's relationships with First Nations are a priority (see the Community Development section for details). In other cases, it involves building new partnerships in emerging markets.

For example, in China, Alcan is demonstrating leadership as a responsible partner through the introduction of the *EHS FIRST* management system at all its facilities including the new joint venture aluminum smelter operation. In its engagement with various government agencies in China, Alcan is introducing its sustainability approach on a range of both domestic and international issues ranging from environmental, health and safety matters to climate change. The Company is actively sharing its sustainability model experiences with Chinese stakeholders at a variety of levels and is continuing to explore a number of cooperative initiatives with government agencies and NGOs to further the sharing of best practices.

> Visit www.alcan.com/SR05 for more details

External engagement efforts in other regions include Canada where, as a result of commitments made to the B.C. provincial government and other industry leaders in B.C., Alcan worked closely with Canadian Business for Corporate Responsibility (CBSR) to organize two conferences aimed at promoting and enhancing awareness of sustainability within the corporate sector of western Canada.



CANS FOR HABITAT
Aluminum Cans Build Habitat for Humanity® Homes

The first conference, held in 2004 with over 200 participants, discussed best efforts and best practices to improve sustainability practices. The second conference, organized in February 2005 with over 240 participants, provided a forum for learning about successful relationships and partnerships that exist between companies and First Nations. Speakers came from First Nations organizations, corporations and governments across Canada.

Furthermore, Alcan was the first company (in what is still a very small group) to receive a multimedia environmental permit from the provincial government. This was achieved due to the initiative taken by Alcan's B.C. operations in establishing a voluntary five-year action plan related to pollution prevention and based on opportunities identified by a group of Alcan's stakeholders known as the Public Advisory Committee (PAC).

Community Engagement

Sustainability has been embedded in Alcan's Community Investment Program. One key outcome of this is the creation, in January 2004, of the *Alcan Prize for Sustainability*—an annual \$1 million award to recognize outstanding contributions to the cause of global sustainability by not-for-profit, non-governmental or civil society organizations. To ensure impartiality, the application and selection process is managed by the Prince of Wales International Business Leaders Forum and adjudicated by a panel of internationally distinguished sustainability experts.

In the first year of the award program, almost 500 submissions were received from 79 countries. The first winner was the Forest Stewardship Council (FSC), an international organization based in Bonn, Germany. The core mandate of the FSC is to develop standards for responsible forest management through an inclusive consultative process. FSC standards are endorsed by a broad base of stakeholders ranging from leading environmental organizations and community groups to retailers and forestry product companies. Alcan also

awarded bursaries (\$15,000 each) to a select number of short-listed candidates as recommended by the Adjudication Panel.

In May 2004, also as part of its Community Investment Program, Alcan launched the *Alcan Builds on Recycling Program* in Canada in conjunction with Habitat for Humanity. Alcan is a major supporter of recycling initiatives in communities around the globe and has also long been a supporter of Habitat for Humanity International. Under the new program, two levels of initiatives are available to Habitat for Humanity affiliates to recycle used aluminum beverage cans (UBCs). The first level provides dollar-for-dollar matching grants, to a maximum of CAN\$2,500 a year to the affiliates who earn the highest cash value through recycling UBCs. The second level awards a fully funded house to the two most successful recyclers – one on the basis of total cans collected, the other on the basis of total cans collected per capita in the affiliate's region.

FIVE-YEAR POLLUTION PREVENTION PLAN IN BRITISH COLUMBIA RENEWED

The Pollution Prevention (P2) Plan applicable to the Kitimat smelter for 1999-2004 was voluntarily developed with extensive input from a multi-stakeholder Public Advisory Committee. It included 15 pollution-reduction opportunities (such as reducing spent potlining generation or GHG emissions), and 12 information gaps (issues to be documented include the level of emissions and potential impacts of contaminants). The intent of the P2 Plan was to exceed regulatory compliance, by reducing or eliminating pollutants at source.

The approach has been successful. Action has been taken with respect to all 15 pollution-reduction opportunities, with improvements reached in eight cases and on target to achieve another two beyond 2004. Actions to address 10 of the 12 information gaps have been successfully completed.

Through the implementation of the P2 Plan, Alcan's B.C. operations obtained the multimedia environmental permit – the first such permit to be issued in British Columbia, and still one of the few that exist. A renewed P2 Plan is being developed for the period 2005-2009. It will cover all Alcan B.C.'s operations. Pollution-reduction opportunities and information gaps remaining from the first five-year period will be included.

Alcan operations are seen by public authorities and community stakeholders as being conducted in a very responsible manner with respect to the protection of the environment. This contributes to public acceptance as well as renewal of permits by the public authorities.

By recycling the largest number of UBCs, two affiliates (Sechelt, B.C., and Toronto, Ontario) were each awarded CAN\$60,000 by Alcan to build a home.

Investor engagement

Investors and other stakeholders are increasingly interested in assessing companies for their corporate sustainability performance. They rely on a range of direct interviews and questionnaires with companies as well as published information to build a clear picture of a company and its sustainability performance. Alcan is an active reporter to a number of key research firms tracking this information and, in the process, is helping the socially responsible investment community benchmark companies for their performance.

Key reporting initiatives in which Alcan regularly participates include:

- Dow Jones Indices
- Ethical Investment Research Service (EIRIS)
- Michael Jantzi Research Associates (MJRA)
- Ethicscan
- Sustainable Asset Management (SAM)
- The Ethical Funds Company
- Carbon Disclosure Project

Among the various assessments by external groups in 2004, Alcan's rankings and inclusions in screened sustainability indices include:

- The top ranked company in the metals sector in *Fortune Magazine's* Most Admired Companies list;
- Selection as a member of the Dow Jones Sustainability World Index (tied for top spot in its sector);
- Inclusion in the FTSE4Good Index Series;
- Innovest's highest ranking of AAA;
- One of the Global 100 Most Sustainable Corporations in the World;
- Selection as one of the top companies for Corporate Social Responsibility by the *Globe and Mail* annual ranking in Canada – rated number one in its sector and chosen as one of the special “World Leaders” for continued international recognition in this field.

> Visit www.alcan.com/SR05 for more details

Corporate Engagement – Beyond Alcan

Alcan also works with or assumes a key role in a range of multi-stakeholder and/or industry groups to further the cause of sustainability. These include the following:

- Global Compact (see page 73 for more details)
- Global Sustainable Cities Project
- WBCSD
(Vice chairman: Travis Engen, President and CEO, Alcan Inc.)
- WBCSD Working Group on Accountability and Reporting
(Co-chair: Travis Engen, President and CEO, Alcan Inc.)
- Partnering Against Corruption Initiative
- WEF (World Economic Forum)

- ISO Advisory Group on Social Responsibility
(Chair: Daniel Gagnier, Senior Vice President, Corporate and External Affairs, Alcan Inc.)
 - European Aluminium Association - Aluminium for Future Generations
 - International Aluminium Institute (IAI)
(Chair: Travis Engen, President and CEO, Alcan Inc.)
 - GRI Indicators Working Group
 - Prince of Wales International Business Leaders Forum
(Chair: Travis Engen, President and CEO, Alcan Inc.)
 - World Economic Forum Water Initiative
(Co-chair: Travis Engen, President and CEO, Alcan Inc.)
 - International Decade of Water
 - WBCSD Water Program
- > Visit www.alcan.com/SR05 for details of each initiative

Awards and Recognition for Sustainability

The following awards are representative of those received in 2004 in recognition of Alcan's sustainability commitment.

Corporate Knights

Corporate Knights is the world's first mass market magazine with an explicit focus on corporate social responsibility. Its aim is to enhance transparency in ways that identify those companies that are leading – or lagging – in the charge to a better world. *Corporate Knights* ranks companies annually on their corporate social responsibility performance based on input from a number of leading socially responsible investment research firms.

Corporate Knights ranked Alcan as third out of Canada's *Best 50 Corporate Citizens* and awarded Alcan the recognition of *Best International Corporate Citizen* in 2004.

Innovative Environmental Program Award

This award is presented every year to a company committed to protecting the environment and contributing to solutions that promote the disposal of plastics in the waste stream. Alcan Composites USA Inc. received the 2004 *Innovative Environmental Program Award* from the International Association of Plastics Distributors (IAPD) in recognition of its outstanding corporate recycling practices.

IAPD officials highlighted the excellent job Alcan Composites is doing at integrating EHS into its daily business. Recycling programs at the company's Benton, Kentucky facility incorporate plastics, aluminum, wood pallets, oils and solvents. Employees also recycle aluminum consumer products and donate the proceeds to Habitat for Humanity.

Deafness Research Foundation Corporate Leadership Award

Alcan has received the 2005 *Corporate Leadership Award* from the Deafness Research Foundation. This is an international recognition of Alcan's global approach to noise abatement and for the quality of its Hearing Conservation Program.

GLOBE Awards for Environmental Excellence

In May 2005, Alcan was awarded a GLOBE Award for Environmental Excellence under the Corporate Competitiveness Category. The GLOBE Awards, considered the most recognized and respected Canadian awards of their kind, are presented to extraordinary companies and industry groups that have embraced sustainable business strategies and turned them into competitive advantages in the marketplace. Alcan was recognized for its proven record of environmental

stewardship that has materially contributed to economic competitiveness through a commitment to environmental excellence.

Corporate Governance

Alcan is committed to the highest standard in corporate governance. Alcan's practices meet or exceed all applicable stock exchange and regulatory requirements and ensure transparency and effective governance of the Company.

Care is taken to ensure that the Board is constituted of a substantial majority of individuals who qualify as Directors who are unrelated to and independent of management in accordance with stock exchange requirements.

Alcan's Board of Directors regularly reviews its corporate governance practices in light of any developing requirements in this area. As new provisions come into effect, the Board reassesses its corporate governance practices and implements changes where appropriate.

Alcan's corporate governance practices stipulate that Board approval is mandatory for capital expenditure budgets, significant investments and divestments, strategic and value-maximizing plans, and any other matter that may have an important impact on the Company.

Alcan's Board has established four committees, each constituted by its own charter and composed solely of independent Directors.

The Committees of the Board are: The Corporate Governance Committee, the Audit Committee, the Human Resources Committee and the Environment, Health and Safety Committee. The Nominating Committee is constituted as a sub-committee of the Corporate Governance Committee.



Isal smelter, Iceland.

Corporate Governance Committee

This committee has the broad responsibility of regularly reviewing corporate governance practices in general within Alcan, as well as monitoring the size and composition of the Board and developing position descriptions for Directors, the Chairman and the CEO.

Nominating Committee

The Nominating Committee reviews candidates for nomination as Directors and these nominees will be recommended as candidates for election to the Board.

Audit Committee

The committee's main objective is to provide an effective overview of Alcan's financial reporting process and internal control functions. Among its other duties, the Audit Committee ensures that the Company makes timely disclosure of activities that would materially impact its financial statements.

Human Resources Committee

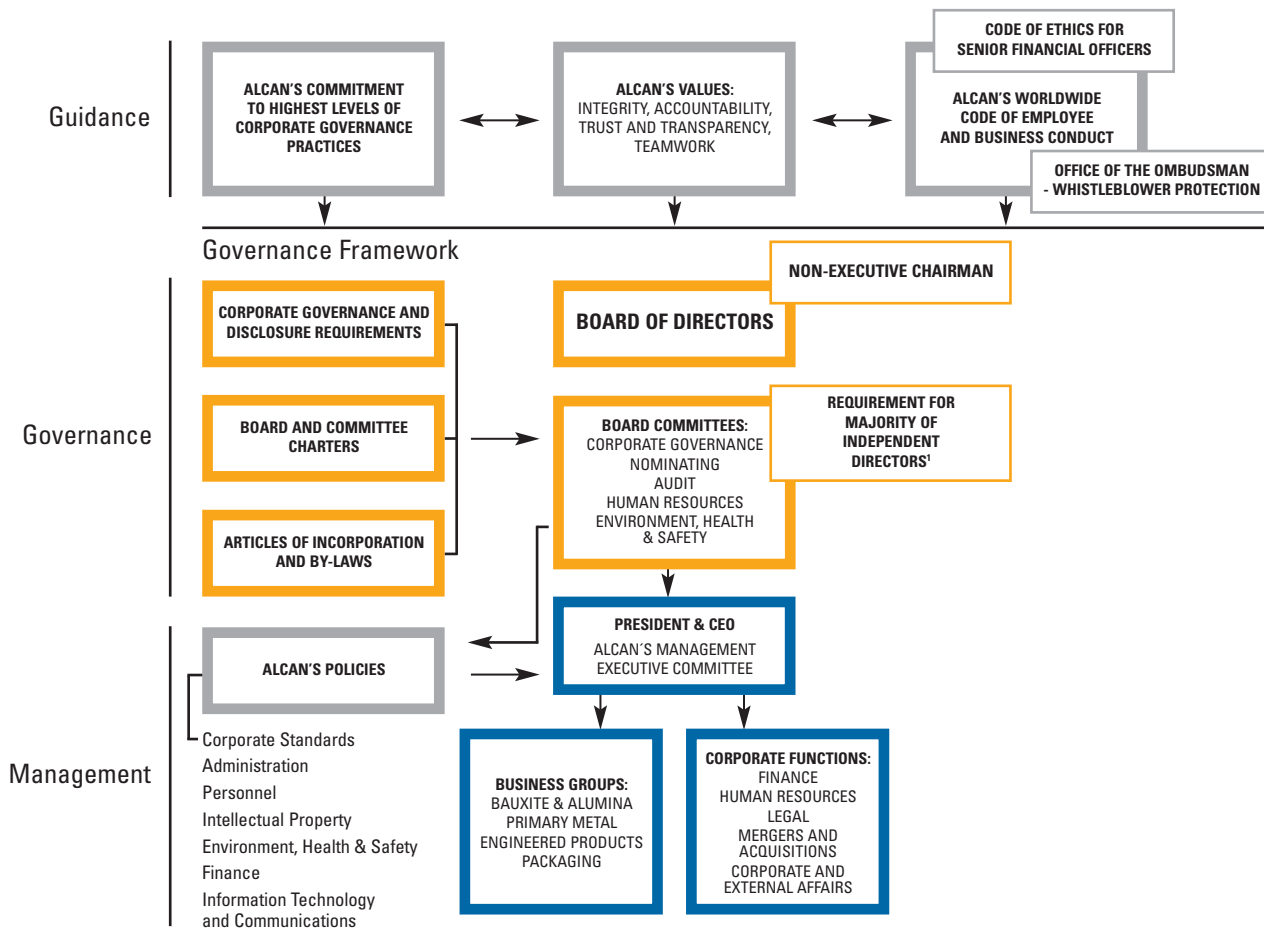
With a broad responsibility to review all human resources policy and employee relations matters, this committee is responsible for periodically reviewing the overall management organization structure, succession planning for senior management, reviewing recommendations for the appointment of Executive Officers and making recommendations based on trends in the area of human resources management.

Environment, Health and Safety Committee

This committee oversees the policy, management practices and performance in environment, health and safety and makes recommendations to the Board with regard to current and changing requirements. The committee also reviews the latest legal, regulatory and consumer environmental trends as they impact Alcan and its stakeholders.

In addition, the Company has a *Worldwide Code of Employee and Business Conduct* that governs all employees as well as Directors, consultants and suppliers. As an annex to the Code and supplemental thereto, the Company has adopted a *Code of Ethics for Senior Financial Officer* including the CEO, the Chief Financial Officer and Controller.

ALCAN GOVERNANCE AND MANAGEMENT FRAMEWORK



¹ All Directors with the exception of the President & CEO are currently independent.

Energy is a vital industrial input for Alcan's operations, especially in its Bauxite and Alumina and Primary Metal groups. The energy mix, its relative availability and cost affect Alcan's competitiveness, stakeholder interests, and a range of environmental issues related to sustainable energy management.



Taking action

Energy

Key Challenges and Opportunities:

- Continue research and development in technology and process improvements in Bauxite and Alumina and Primary Metal groups.
- Increase energy efficiency and reduce GHG emissions related to energy use.
- Effectively manage water resources used in power generation activities.
- Engage stakeholders through positive actions and dialogue.

Energy as a key area of focus

1	Short or long term	Business groups most affected	Stakeholders most affected/involved
	Both	Bauxite and Alumina, Primary Metal, Engineered Products	Investors, Customers, Local Communities

Company-wide, Alcan consumed 415 million gigajoules (GJ) of energy for all of its industrial processes in 2004 including direct energy sources used on site and indirect energy sources for site electricity, heat and steam. With such large energy requirements, source reliability and long-term energy costs continue to be key strategic issues, requiring effective management on an ongoing basis – extremely important in a global environment of volatile energy prices.

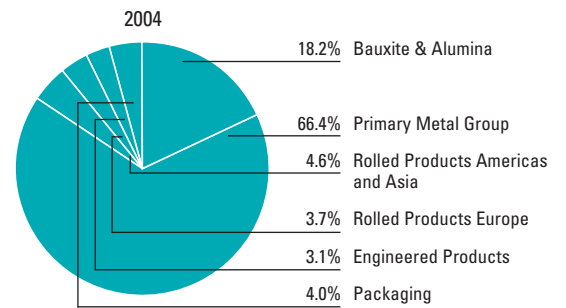
The power-generating facilities owned by Alcan are a critical component of the Company’s competitiveness as an aluminum producer. They provide security of supply, shield the Company from energy market price risk, and also ensure a stable presence in the communities where they are located.

In the **Bauxite and Alumina** group, significant energy is required for a variety of processes, including bauxite mining, ore crushing and transporting of the ore to the refinery. Once at the alumina processing refinery, energy is required for grinding the ore and heating and dissolving aluminum oxide. The raw alumina is then washed, filtered and cooled, heated again to dry, and then transported by conveyor, often over several kilometres, to port facilities for shipping. In 2004, Alcan’s bauxite and mining operations consumed a total of 76 million GJ of energy for such operations.

In the **Primary Metal** group, aluminum smelting is energy intensive, largely due to the electrolytic process whereby an anode and a cathode reduce alumina into molten aluminum and oxygen. The latest technology requires approximately 13,500 kW-h of electricity to produce one tonne of aluminum. During 2004, the Primary Metal group consumed a total of 275 million GJ of energy, the majority of which is required for its aluminum smelting operations.

Approximately 50% of Alcan’s primary smelting capacity is powered by Alcan-owned energy sources. The majority of these power-generating resources are hydroelectric based – Alcan’s preferred source of energy – which provides 57% of all electricity used in its primary smelters worldwide. This extensive owned hydroelectric power network provides energy that is renewable, cost effective and non-polluting. In Canada, where approximately 46% of the Company’s primary metal is produced, Alcan owns hydroelectric facilities in both British Columbia and Quebec, supplying most of its present Canadian power needs. The Natural Resources Stewardship section of this report provides more details on Alcan’s management of the water resources that provide the basis for Alcan’s hydroelectric generation.

Total energy consumption by business group



Total energy consumption
in millions of GJ



The increase in total energy consumption in 2004 is largely due to Pechiney acquisition.

* Alcan started in 2004 to report the energy used by installations on site, excluding efficiency for energy production off site. This figure is more representative for the efficiency of Alcan’s own processes, the total amount being 256 million GJ in 2004.

** Energy figures for 2002 and 2003 include about 10% of energy used for transportation of products to customers. The transportation energy will not be included in the energy figures in the future as the accuracy is much lower than for the other energy data.

Total energy consumption rate
in GJ/US\$ sales



The total energy consumption includes all the direct energy sources used on site as well as the indirect energy sources to produce the energy consumed by Alcan sites as electricity, heat and steam (this means it includes efficiency of energy generation off site).

In addition to competitiveness, there are several issues associated with being both a significant user and producer of energy. These combine to create sustainability challenges and opportunities for Alcan in its management of energy, including purchase, production and use.

Energy, as one of Alcan's key resources, is an integral component of its *EHS FIRST* management system. All Alcan sites are required to promote a systematic approach in resource management, including energy, through the effective use of management systems and through continuous performance improvement.

In Canada, where Alcan operates an extensive owned hydroelectric power network in both British Columbia and Quebec, ongoing dialogue is maintained with communities and the various levels of government to ensure sustainable long-term management of water resources for the benefit of all stakeholders.

Here are some key issues related to energy that Alcan's firm commitment to resource management is helping to address.

Energy Efficiency

Alcan undertook significant efforts in 2004 to achieve greater energy efficiency, including new investments in technology and making optimal use of the available water from reservoirs. And, while Alcan is already very competitive in terms of its large hydroelectric resources, further reducing its demand for hydroelectric power through greater efficiency helps to reduce overall demand for electricity.

For example, in 2004, Quebec Power Operations continued its upgrading of turbine water wheels. The result is higher turbine performance and more electricity produced per volume of water. Approximately CAN\$450 million has been invested to date in this turbine/alternator upgrade

program. By managing water responsibly, the Company achieves energy gains reduces its reliance on external public energy resources and reinforces its position as a responsible community partner.

Since 1979, Alcan's Quebec Power Operations' upgrades have increased the nominal capacity of the entire system from 1,935 MW to 2,004 MW in 2004, with plans to increase that capacity to 2,028 MW by 2008. Furthermore, the more efficient water wheels provide opportunities for increased power generation beyond the nominal capacity during periods of higher than normal precipitation. Overall, the efficiency of the water management has increased from approximately 95% in 1993 to between 98% and 98.5% today.

At the Vaudreuil alumina plant in Quebec, Canada, projects to reduce steam consumption resulted in first-year energy consumption savings totalling nearly CAN\$2.5 million compared to 2003.

> Visit www.alcan.com/SR05 for more details on these projects

HALE PROJECT: REDUCING ENERGY CONSUMPTION IN ELECTROLYSIS

Aluminum is produced through an electrolytic process where an increase in electrical current can increase metal production. In recent years, Alcan's Lynemouth, U.K. smelter has introduced the High Amperage Low Energy (HALE) project to capitalize on this potential.

The project is based on the manufacture and installation of larger anode blocks. This allows for increased electrical current in the smelting process, resulting in increased aluminum production while the same amount of electrical energy is used. With a total investment of US\$40 million over the past three years, the project has benefited both the Lynemouth and Lochaber smelters. By the end of 2004, annual metal production was achieved with a site-specific energy consumption record of 14.9 kilowatt-hours per kilogram of aluminum produced. This represents a 6.3% reduction compared to five years ago.

Ongoing efforts of employees at both smelters are focused on monitoring smelter pot operations to minimize energy consumption as much as possible.

The HALE program is being rolled out at most Alcan smelters.





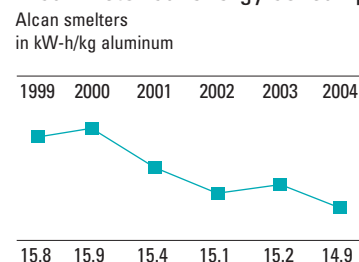
Lynemouth powerhouse, U.K.

The International Aluminium Institute reports that primary energy requirements per tonne of aluminum produced have decreased by one third between 1950 and 1990 and by one third again since 1990. Alcan has been an important contributor to this global trend.

The broader societal challenges of rising energy demand, which translates into higher energy prices and increases in energy-related GHGs and other emissions, provide an opportunity for the

substitution of lightweight aluminum applications in place of heavier materials. This is especially relevant in transportation applications. The Product Stewardship section of this report outlines some of the developments being made by Alcan in this important area, as well as the importance of aluminum recycling in reducing energy use.

Alcan historical energy consumption



REDUCTION OF GHG EMISSIONS THROUGH BIOMASS

Alcan's Lynemouth Power Station is the most efficient coal-fired power station of its kind in the U.K. Following permission granted by the U.K. Environment Agency in December 2003 for industry to burn biomass as a commercial fuel, Lynemouth began investigating the viability of this alternative. Burning biomass is classified as "carbon neutral" because the resulting CO₂ emissions roughly equal the amount of CO₂ removed from the atmosphere as the plant grows. Biomass is obtained from organic matter, typically forestry and wood production residue from sustainable sources.

With the reduction of GHG emissions as a key driver, Lynemouth utilized 11,000 tonnes of biomass as a fuel to produce electricity, partially displacing the power station's coal requirements. While biomass remains more expensive than coal per unit of energy produced, the reduction in carbon dioxide equivalent (CO₂e) emissions achieved is helping Alcan meet its GHG reduction objectives within the United Kingdom. The CO₂e emissions savings achieved are significant, in the order of 18,500 tonnes, representing 0.7% of all CO₂e emissions produced by the Lynemouth Power Station in the same year from coal.

With this encouraging experience in 2004, studies are now underway on how to increase the use of biomass in the boilers through the installation of additional handling equipment and a system to inject biomass directly. All employees at the power station are involved in finding the best ways of integrating biomass use in regular operations.

Energy Sources

A considerable amount of the greenhouse gas (GHG) emissions generated in the aluminum industry is related to energy production. Alcan uses both hydroelectric and non-hydroelectric energy sources. Given the high priority that the Company has placed on reducing greenhouse gas emissions, Alcan's overall energy management strategy includes pursuing the best energy mix from available energy resources, as well as pursuing development of non-carbon based energy projects where feasible.

At the ISAL smelter in Iceland, a project to reduce energy consumption was driven by the added benefit of significantly reducing GHG emissions. A number of key initiatives in 2004 resulted in a 14% reduction in fossil fuel consumption.

> Visit www.alcan.com/SR05 for more details

Another exciting development related to energy mix was at Alcan Gove's alumina refinery in Australia, where an agreement was reached with the PNG Gas Project on commercial terms for the sale of natural gas, converting the facility from its current reliance on imported fuel oil.

Social Dimension

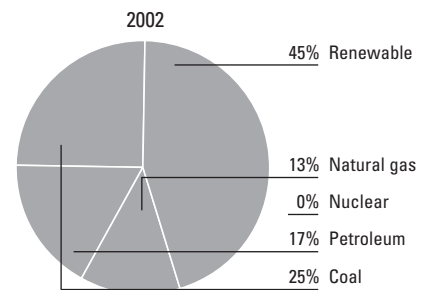
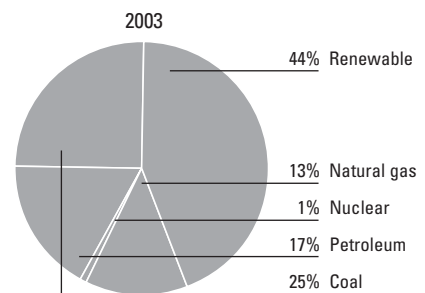
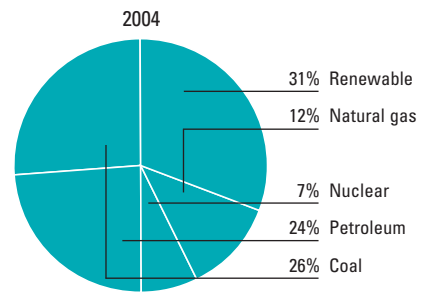
Alcan's energy management involves a broad range of social issues, particularly in the management of large-scale water resources where impacts on ecosystems, recreation, agriculture, and tourism and traditional ways of life must be taken into account. Because of the importance that communities place on water resources, there are high expectations for the Company to use and manage such resources responsibly and to work with stakeholders in addressing issues and concerns.

Expectations can be wide ranging. For example, many stakeholders expect that where Alcan holds long-term water rights for power generation, it has a responsibility to maintain and create new jobs. This of course is balanced against Alcan's business competitive and market pressures, which also influence decisions on where to operate and what size of operation to maintain. But the Company is always working to demonstrate its commitment to work closely with governments and all concerned stakeholders to ease economic transitional impacts and to help regional economies to diversify.

In Canada, this is illustrated in the Saguenay-Lac-Saint-Jean region of Quebec, where Alcan has created an Office of Economic Diversification (as explained in the Community Development section of this report), and in British Columbia, where a very positive relationship has been established with local First Nations communities after a lengthy period of limited dialogue dating back to the 1950s.

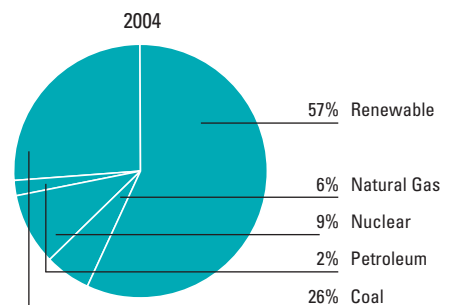
In the B.C. case, through the development of Protocols for Mutual Respect and Economic Cooperation with First Nations, Alcan has paved the way for independent initiatives with groups such as the Cheslatta Carrier and Haisla First Nations. The Cheslatta First Nation has acknowledged that the relationship has prospered due to the fact that Alcan's sustainable environmental practices are consistent with their own land management practices and philosophies. Projects include forest health contracts, a health and wellness centre and Nechako Reservoir salvage operations.

Alcan's total energy mix
all operations



Today, about 31% of the energy used by Alcan is from clean, renewable hydroelectric sources. With the acquisition of Pechiney, the energy mix changed to include more nuclear and petroleum-based sources. For smelting, 66% of the energy used has no GHG emissions, of which 57% is based on hydroelectricity and 9% on nuclear.

Energy mix
Alcan smelting operations only





Additional Sustainability Examples

www.alcan.com/SR05

Primary Metal

- “Save Watts” program at Ronchin (ECL) in France

“Our formal relationship with Alcan has produced many positive cultural, social, spiritual and economic benefits to my people. We have welcomed Alcan into our territory and look forward to generations of peace and prosperity.”

Chief Corinna Leween,
Cheslatta Carrier Nation

Furthermore, in 1998, Alcan, in cooperation with 18 other organizations created the Nechako Watershed Council (NWC), a multi-stakeholder forum that allows a wide range of stakeholders to identify, study and reach consensus on matters related to water management on the Nechako watershed. Through the NWC, consensus has been reached on a number of issues, including the water licenses for agricultural purposes and the best way to enhance the environment for the Nechako River watershed.

Managing stakeholder expectations concerning Alcan’s management of large scale water resources requires extensive engagement with a variety of external stakeholders, including public authorities, regional socio-economic leaders, community users of water resources, and the population in general. The notion is especially true in Kitimat, British Columbia where the local municipal government filed a petition in B.C. Supreme Court challenging Alcan’s right to sell power for use outside of the District of Kitimat. The controversy is challenging because Alcan has a number of strong relationships with stakeholders and others in the community and deals with the District on a number of ongoing business issues while, at the same time, the Company must defend its rights and interests in the legal proceedings.

CONVERSION TO NATURAL GAS – ALCAN GOVE AUSTRALIA

Delivery of natural gas to Gove will ensure a secure, economical and long-term energy source for the refinery, have a positive environmental impact, as well as provide opportunities for new and existing businesses in the Northern Territory and Queensland states. The long-term agreement with the PNG Gas Project will supply 43.5 petajoules of natural gas annually over a 20-year period. The first delivery of gas is expected to take place in 2009. The gas will meet the needs of the refinery, which is currently undergoing an expansion from 2.1 million tonnes alumina capacity per year to 3.8 million tonnes as per the \$1.3 billion expansion announced in September 2004.

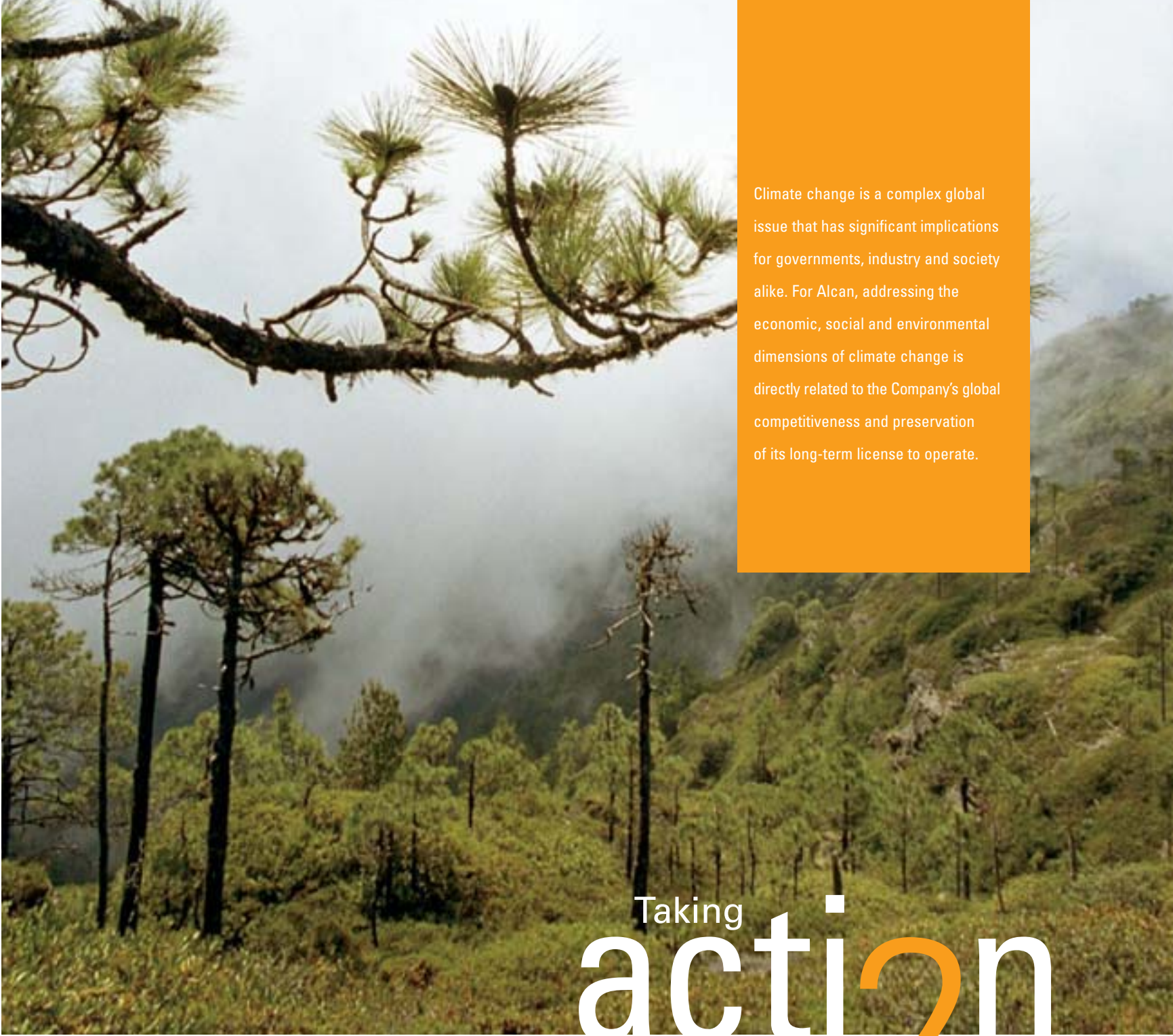
In addition to Alcan’s natural gas demand, the project will include a major gas pipeline to meet the growing needs of the Australian east coast gas market. Alcan’s gas demand is expected to significantly increase the prospects that this project will proceed.

Significant benefits of the conversion will include:

- Improved air quality with a significant reduction in greenhouse gas emissions at the refinery. Gas produces 24% less GHG emissions than fuel oil to produce the same amount of energy. It also contains almost no sulphur dioxide.
- An economic and long-term energy source for the region.
- Lower overall alumina production costs to well below the world average, in conjunction with the refinery expansion.
- Enhanced sustainability of Alcan Gove’s operations in terms of GHG emissions, competitiveness, and community development.

Alcan Gove continues to strive for improved energy efficiencies while building on its track record for reducing greenhouse gas emissions. Actions completed (through Continuous Improvement) in 2004 have resulted in actual greenhouse gas abatement totalling 14,000 tonnes. These actions led to an overall improvement of 13.8% in reduction of GHG emissions per tonne of alumina produced at Gove compared to the 1990 efficiency rate.

Until the new natural gas supplies are available, Alcan Gove has also commenced with a new fuel oil management strategy to switch from high to low sulphur fuel oil during periods of unfavourable wind conditions to improve air quality.



Climate change is a complex global issue that has significant implications for governments, industry and society alike. For Alcan, addressing the economic, social and environmental dimensions of climate change is directly related to the Company's global competitiveness and preservation of its long-term license to operate.

Taking action

Climate Change

Key Challenges and Opportunities:

- Continue process-related improvements (including energy efficiency) to reduce greenhouse gas (GHG) emissions from operations.
- Continue to develop more efficient products, the use and disposal of which contributes to lower GHG emissions.
- Continue efforts with other companies, governments and third parties to ensure that pragmatic and cost-effective solutions are found to reduce GHG emissions.

Climate Change as a key area of focus

2	Short or long term	Business groups most affected	Stakeholders most affected/involved
	Increasingly important	Bauxite and Alumina, Primary Metal, Engineered Products	All

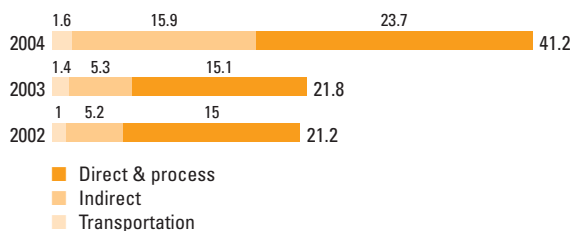
As an aluminum producer, Alcan's greenhouse gas (GHG) emissions are predominantly (about 75%) from the smelting activities in the Primary Metal business group. To produce molten aluminum, electricity is used to power an electrolytic reaction whereby oxygen combines with carbon from a carbon anode, resulting in carbon dioxide (CO₂) being emitted during the process. If fossil fuels are used to generate the electricity consumed, additional CO₂ emissions result. Furthermore, perfluorocarbons (PFCs) are produced intermittently in the smelting process during what is known as the "anode effect", essentially related to the raw material feeding philosophy, which as a result has been completely changed. Until recently, anode effects were considered a necessary part of the raw material feeding process. One kilogram of CF₄ (PFC) has about the same greenhouse gas effect as 6,500 kilograms of CO₂, illustrating how PFCs are extremely potent greenhouse gases.

In absolute terms, Alcan's direct emissions of carbon dioxide equivalent (CO₂e) from fuel consumption and operation processes in 2004 were 23.7 million tonnes. When combined with indirect emissions from purchased electricity and emissions from the transportation of products, Alcan's total CO₂e emissions in 2004 were 41.2 million tonnes, reflecting the addition of all Pechiney sites.

Overall, businesses have an important role to play in managing GHG emissions. Alcan is driving its operations to benchmark performance in terms of reducing its own greenhouse gas emissions, developing products that reduce GHG emissions in their use and disposal, as well as engaging in effective dialogue with key stakeholders. Governments, investors, consumers and NGOs are all monitoring industry efforts to reduce CO₂e emissions, as well as how these businesses publicly report emissions data. Alcan knows that the future acceptability of its operations and products will be judged, in significant measure, by its ability to reduce the intensity of its GHG emissions. In this regard, its ambition is to become climate neutral by no later than 2020 through the full life cycle assessment of its products.

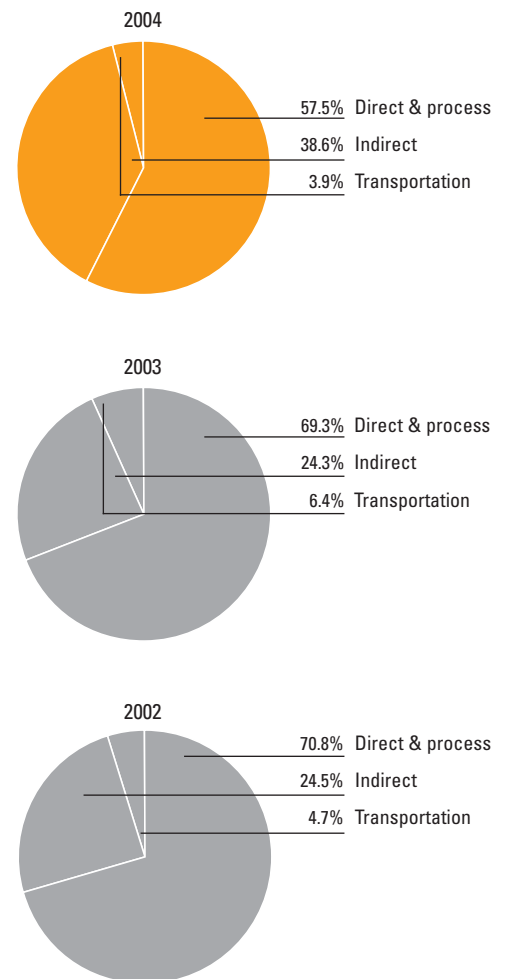
Overall, businesses have an important role to play in managing GHG emissions.

Absolute GHG emissions
in millions of tonnes of CO₂ equivalent



Direct emissions are from fuel consumption and operating processes. Other emissions include estimates related to the production of purchased electricity and transportation of Alcan-owned raw materials and products. The increase in absolute emissions in 2004 is due to acquisitions. In 2004, this reflects primarily the integration of all Pechiney sites. The direct emissions increased by approximately 60%, whereas the indirect emissions increased by approximately 300%. This is due to the fact that the indirect emissions coming from energy sources of the acquired sites are largely carbon based. 87% of Alcan's GHG emissions are related to operations located in Annex B countries of the Kyoto protocol.

Absolute GHG emissions



Taking Action on Climate Change

In the early 1990s, climate change issues were growing in importance following the 1992 Rio Earth Summit. At this time, Alcan took a closer look at how society's response could significantly impact operations, the acceptability of aluminum products, and the Company's competitiveness. Alcan became an industry leader in identifying and quantifying the sources of its emissions, researching ways to address CO₂e emissions (particularly those related to PFCs), and taking measures to improve process and product efficiency. Consequently, managing CO₂e emissions quickly became a key component of the Company's overall environmental commitment.

Alcan has assumed a prudent, pragmatic and voluntary approach on the issue of addressing climate change, and believes that actions taken need to involve truly global responses.

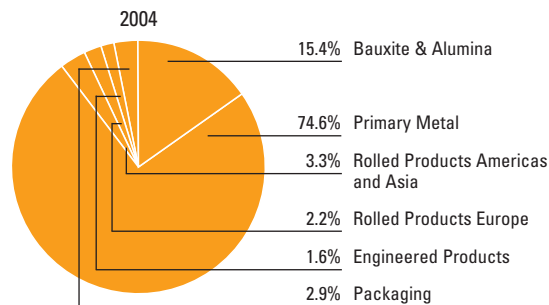
Internal Investments, Process Controls, Innovations

CO₂e emissions have long been a key indicator used company-wide at Alcan. Business group and R&D efforts have addressed sources such as electricity generation, fossil fuel consumption, transportation and process-related emissions. In fact, by 1999, Alcan had already reduced annual emissions by about 12% in comparison with its performance in 1990, measured on the basis of holdings in 1999. This was achieved despite overall production increases of primary metal of 4% by 1999 compared to 1990.

Today, greenhouse gas management is a fully integrated component of Alcan's *EHS FIRST* and business management systems. Using recognized methodologies, all sites are required to produce an inventory of all emissions related to greenhouse gases, including direct and indirect emis-

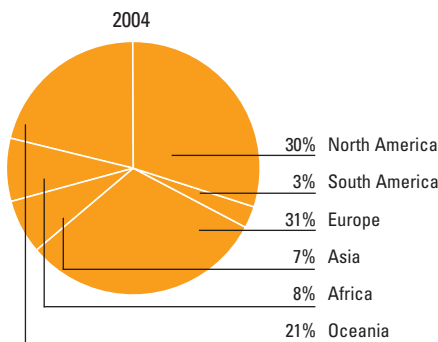
Absolute GHG emissions

by business group



Absolute GHG emissions

by region



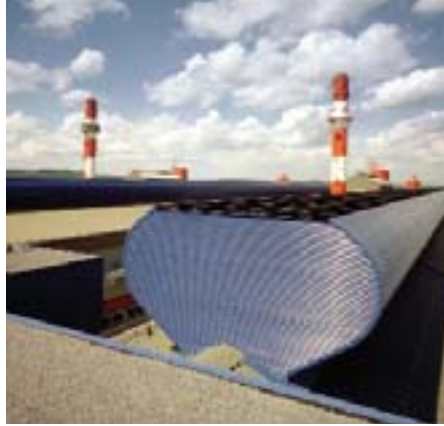
North America and Europe account for about 30% of Alcan's total GHG emissions. More than 20% of GHG emissions are in Australia which now include smelting and alumina refining capacities added through the Pechiney acquisition. Asia accounted for 7% in 2004 due to new engagement in a joint-venture smelting operation in China.

sions from process and energy consumption and the transport of the finished products. This ensures a thorough understanding of the level of emissions and their sources, and helps in developing appropriate management strategies. The implementation of *EHS FIRST* has helped to identify GHG reduction opportunities through process improvements, energy efficiency, transportation, and energy mix.

The principal vehicle for this effort is TARGET – Alcan's greenhouse gas emissions reduction program, which was launched in 2001. The program accommodates economic growth, embeds an emissions reduction and energy efficiency philosophy throughout the Company and optimizes long-term, cost-effective reductions and the ongoing reporting of greenhouse gas emissions.

TARGET uses a moving baseline to allow for a comparison of reductions to a reference year, and allows for accurate adjustments to objectives to reflect changes in the corporate mix through acquisitions, upgrades, shutdowns or divestments. Measurements of reductions under TARGET, therefore, indicate real performance improvement. On this basis, in the first four years of TARGET (2001-2004), the cumulative GHG reduction objective was 575,000 tonnes of CO₂e. Alcan far surpassed this objective with GHG reductions of 2.9 million tonnes of CO₂e during the first four years of the program.

Key to this success are process-related improvements in addition to the energy efficiency efforts and future focus on energy management as discussed in the Energy section of this report.



View of roof vent at Laterrière Works, Quebec, Canada.

The most significant progress was in reducing “anode effects” and the associated PFC emissions at the many smelters operated by Alcan worldwide. Investment in equipment, new IT software and hardware, the introduction of more efficient working practices, and better monitoring of the pots have all contributed to improved control of the smelting process. Success is directly related to highly motivated cross-departmental teams including operations, maintenance, engineering, and environment personnel.

Alcan continues to research new innovations with the goal to eventually eliminate PFCs from the electrolytic process completely.

Technology changes and employee commitment at Alcan’s Saint-Jean-de-Maurienne smelter in France resulted in a 55% reduction in CF₄ emissions in 2004 compared to 2003, representing approximately 17,500 tonnes of CO₂e. With an investment of \$4.46 million, new systems were installed on all 180 pots in the plant, allowing better control of the electrolytic process, thereby reducing anode effects significantly.

At the Vlissingen smelter in the Netherlands, modernizations over the past two years have resulted in an 80% reduction of CO₂e (including PFCs) per tonne of aluminum produced. Total CO₂e emissions fell from 2.2 million tonnes in 2002 to 508,000 tonnes in 2004. This is a significant contribution toward the overall commitment by the Netherlands to reduce CO₂e emissions by 25 million tonnes by 2012. Vlissingen hopes to further reduce emissions through improved energy consumption, which will be reflected in associated GHG reductions by the power supplier.

Continuous improvement in the smelting process remains a key component of Alcan’s approach to reducing greenhouse gas emissions. In the meantime, Alcan is exploring other alternatives by which it can offset greenhouse gas emissions by increasing the uptake of CO₂ by vegetation. For example, a woodlands regeneration project on Alcan land at Loch Leven in Scotland not only enhances the area’s biodiversity but also makes a significant contribution to the reduction of CO₂ levels – up to some 20,000 tonnes annually, which is equivalent to about 25% of GHG emissions from the Lochaber smelter.

> Visit www.alcan.com/SR05 for more details

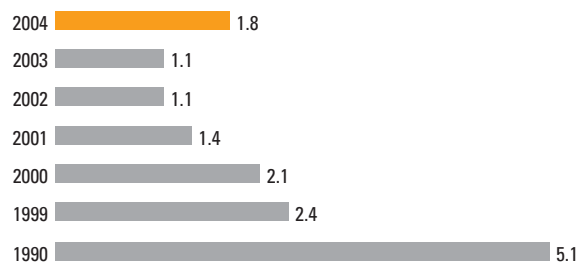
Global Partnerships, Interaction with Stakeholders

Alcan works with other companies, governments and third parties to ensure that pragmatic and cost-effective solutions are found to reduce greenhouse gas emissions. The Company advocates and practises the reduction of GHG emissions on a global basis and believes that the aluminum sector (and other sectors), acting worldwide, can contribute through collective action to reduce emissions and by participating in the climate change policy debate and policy development process.

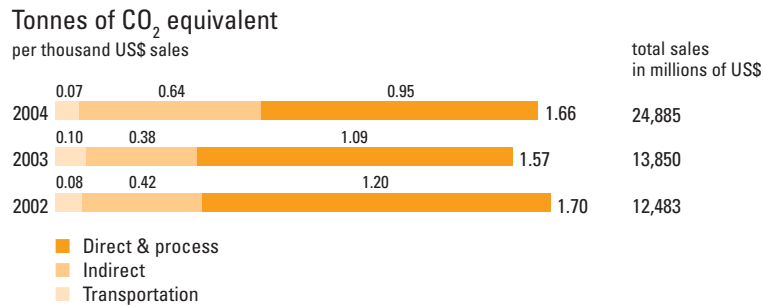
A key challenge to policy makers is to ensure that measures will result in real emissions reductions, rather than merely transferring emissions to another part of the world. Alcan believes the best approach to reducing emissions in the aluminium industry would be through a global commitment, under which all companies would build only the best available technology economically available and use best practices with existing plants. It is working with the OECD to develop such a global sector approach.

PFC emissions

in tonnes of CO₂ equivalent per tonne of hot metal produced



There are two reasons for the increase in PFC emissions per tonne of hot metal produced compared to previous years, the most significant of which is the change in technology mix due to the acquisition of Pechiney. In addition, new up-to-date measurements were performed which showed that, for some installations, emission factors for PFC had to be adjusted.



For Alcan, an effective GHG management model will be based not only on production emissions but also on the emissions generated through the entire product life cycle.

G8 Climate Change Roundtable

Along with 22 other international businesses, Alcan participated in an industry group that pressed for urgent global action to combat climate change. In his capacity as G8 president for 2005, British Prime Minister Tony Blair assembled the group to form the G8 Climate Change Roundtable at the World Economic Forum in Davos, Switzerland. The Prime Minister asked the group to share with him their perspectives and expertise ahead of the G8 Summit held in July 2005.

The group endorsed a package of recommendations that are part of a Framework for Action calling for the G8 governments and the private sector to work collectively towards changing the pace and scale of greenhouse gas reductions.

> Visit www.alcan.com/SR05 for more details

The increase in total emissions per \$ sales in 2004 is due to the change in the energy mix for indirect sources of energy. Former Pechiney sites use more carbon-based energy sources.

The decrease of direct emissions per \$ sales is due to Alcan's move toward more efficient processes.

OECD Roundtable on Sustainable Development

Alcan has participated in the Organisation for Economic Co-operation and Development (OECD) Round Table on Sustainable Development. The goal is to explore the role that sectoral strategies could play in reducing the future growth of greenhouse gas emissions. Alcan's participation included the sponsorship and development of an OECD discussion paper to explore the role of these strategies beyond the 2008-2012 Kyoto period.

Alcan's proactive role in industry responses to greenhouse gas emissions includes voluntary GHG emission reduction initiatives such as a landmark

agreement with the Government of Quebec (Visit www.alcan.com/SR05 for more details), as well as with AERES in France. As part of the latter national voluntary commitment program, Alcan reduced emissions by 26% for the 2003-2004 period in comparison with 1990 levels. Under AERES, Alcan is targeting total reductions of 33% between 2005 and 2007 compared to 1990. In the U.S., Alcan joined the Climate Leaders Program, a voluntary industry-government partnership set up through the U.S. Environmental Protection Agency.

REDUCING ANODE EFFECTS AT LANNEMEZAN

In the past two years, the Alcan smelter at Lannemezan in France has reduced GHG emissions by over 66%, with a large portion resulting from efforts to curb anode effects.

Since June 2003, a special initiative engaged all plant employees to explore ways to improve practices and processes in the electrolytic reduction process. Immediate actions included strict adherence to proper operating procedures, process control optimization, automated crust breaking in the pots and improved alumina feeding equipment.

In less than two years and without a major investment, significant reductions of anode effects and over-voltage were achieved, leading to the reduction of CF₄ emissions (a greenhouse gas) from 7 kilograms per tonne to 2 kilograms per tonne of aluminum produced. This equates to over 2 million tonnes of CO₂e, roughly equivalent to 800,000 light vehicles being removed from the highways. By April 2005, the CF₄ emission rate was further reduced to 1.56 kg/tonne, 80% lower than at the start of the program.

> Visit www.alcan.com/SR05 for more details

GHG emissions from alumina hydrate production

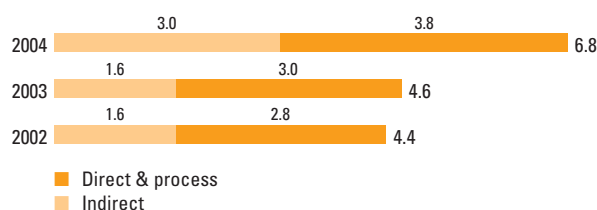
in tonnes of CO₂ equivalent per tonne of alumina hydrate



The change in Bauxite and Alumina emission intensity is due to the acquisition of Pechiney and to the related product-mix change.

GHG emissions from aluminum production

in tonnes of CO₂ equivalent per tonne of hot metal produced



The increase in total GHG emissions per tonne of hot metal produced is due to an increase in PFC emissions as explained in chart notes on page 29, and an increase in indirect emissions coming from energy sources of the acquired sites as explained in chart notes on page 27.

Measurement and Reporting

Alcan remains actively involved in the work of the International Aluminium Institute (IAI) on the *Greenhouse Gas Protocol* developed by the World Business Council for Sustainable Development (WBCSD) and the World Resource Institute (WRI). Work at the IAI level has resulted in the preparation of a 'sector supplement' to the WBCSD/WRI standard that provides additional interpretation, guidance, and examples tailored to the international aluminum industry. This work is helping to achieve consistency and transparency in calculating and reporting GHGs throughout the aluminum sector for both internal and external use.

The lack of global platforms to make company GHG data available has been identified as a particular issue. Alcan is involved in global efforts to develop international standards as well as measure and report emissions data. Alcan is participating in the ISO work to develop an international standard to measure and report GHG emissions, reductions and removals, known as ISO 14064. Alcan is also one of the first companies to take part in the World Economic Forum's Global Greenhouse Gas Register. Launched in January 2004, the Register has been developed in cooperation with leading businesses and environmental organizations to promote corporate GHG emission transparency.

Emissions Trading


Through participation in the International Emissions Trading Association (IETA), Alcan supports the establishment of effective market-based trading systems for greenhouse gas emissions by businesses. The aim is to foster an active, global greenhouse gas market, consistent across national boundaries.

Alcan has been active in advising governments on a national level. For example, in the U.K., this includes the Whitehall Climate Change Group (industry and government working on recommendations for future climate change policy and EU emissions trading) as well as the U.K. Emissions Trading Group (advising the government on the implementation of the EU Emissions Trading Directive).

Furthermore, Alcan officials have participated in the development of the Centre for European Policy Studies recommendations on the EU Emissions Trading System, which have been submitted to the EU Commission.

Product Stewardship and GHG reductions

In addition to direct reduction efforts, a significant opportunity also exists for Alcan to contribute globally to the reduction of GHG emissions by promoting the increased use of aluminum products in transportation applications. By considering the whole life cycle of the product, including use and recycling and not just production, a full picture of the product's interaction with the environment can be gained. Increasing the end-of-life recycling rate of products is another way to cut associated greenhouse gas emissions. Some of these exciting opportunities are discussed in the Product Stewardship section of this report.



Given the energy, capital and material-intensive nature of Alcan's operations, natural resource stewardship at Alcan is a fundamental practice that offers savings both for the environment and the bottom line.

Taking action

Natural Resource Stewardship

Key Challenges and Opportunities:

- Engage stakeholders in natural resource stewardship efforts.
- Optimize water use through both a reduction in consumption and reuse.
- Demonstrate responsible stewardship of land resources.

Natural Resource Stewardship as a key area of focus

3	Short or long term	Business groups most affected	Stakeholders most affected/involved
	Both	Bauxite and Alumina, Primary Metal	Investors, Communities

At Alcan, energy, water and land use represent the most significant natural resource issues, although their relative impact varies depending on the business group. Energy is a critical issue on its own, and is covered separately in this report. Water is a critical component in Alcan's power generating operations as well as a critical input in cooling and cleaning in a range of operations for all Alcan's business groups. Land use and its stewardship are most relevant to the Bauxite and Alumina group's operations. As discussed in the Energy section of this report, use of natural resources are addressed as integral components of Alcan's *EHS FIRST* management system, whereby Alcan takes a systematic approach to managing resources, including striving to improve the efficiency of use, as well as recycling and reuse.

Water Resources

Alcan is firmly committed to the sustainable management of the significant water resources that it owns and/or oversees. These resources and other water rights are viewed as a form of public trust and a fundamental component of the Company's long-term licence to operate. Management of water resources is also an integral component of Alcan's *EHS FIRST* management system that seeks to improve the efficiency of water use, including direct consumption, recycling and reuse. The Bauxite and Alumina group and the Primary Metal group are the largest users of water at Alcan and both share an important challenge to optimize water utilization.

From an environmental perspective, managing water resources for electricity generation encompasses a wide range of issues, including water levels, shoreline erosion, temperature, water routes, and other challenges such as impacts on downstream habitat and species. Management efforts need to address any negative impacts associated with the above, in addition to the positive contribution that water management can make to preventing catastrophic floods and droughts.

In January 2004, Alcan released a position paper in recognition of the International Year of Freshwater. Entitled *Committed to the Sustainable Management of Water—One of Our Most Precious Resources*, the paper provides concrete examples of Alcan's best practices in watershed management, increased process efficiencies, usage conservation efforts, the reduction/improvement of wastewater and water system remediation efforts. The paper is available for downloading at www.alcan.com.

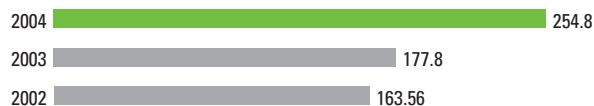
Alcan is also actively involved in efforts related to global water management, including those of the World Business Council for Sustainable Development, the Organisation for Economic Co-operation and Development, the United Nations Environment Programme, and the World Economic Forum Water Initiative (co-chaired by Alcan's president and CEO).



Saint-Louis river close to Beauharnois plant in Quebec, Canada.

Total water use

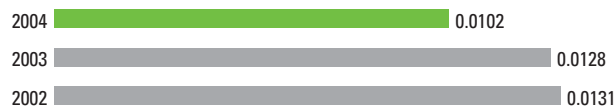
in millions of m³



The increase in total water use is due to the Pechiney acquisition.

Total water use rate

in millions of m³ per million of US\$ sales



Alcan demonstrated significant improvement in 2004, reducing its rate of water consumption. GO-PDM, a data collection tool that will improve the ability to assess its use of water resources and identify opportunities for improving performance, is currently being implemented.

Alcan often uses water that is shared with surrounding communities. Reductions in the availability of water can result in water restrictions on Alcan, which can impact its ability to operate. In cases where public water supply is being used, lowering water consumption and recycling water helps reduce the need to draw from that supply. These efforts can reduce costs for Alcan and, importantly, help ensure water availability for the community, other businesses and the ecosystem.

RECYCLING COMMUNITY WASTEWATER FOR ALUMINA PROCESSING

Queensland Alumina Limited (QAL – Alcan owns 41.4%) and Gladstone City Council (GCC) in Australia have established a long-term partnership based on using treated effluent from the city for the final wash process of alumina refining.

The Treated Effluent Reuse Scheme is a unique initiative where all the secondary treated effluent from GCC's Calliope River Sewage Treatment Plant is pumped to QAL. The use of treated effluent does not affect the quality of QAL's product, thus maintaining its world class standard in alumina quality. Water is integral to the alumina refining process and, prior to the introduction of the Effluent Reuse Scheme, QAL was pumping an average of 14,000 megalitres per year of fresh water from the Awoonga Dam as the largest consumer of fresh water in the Gladstone Region.

Although the possibility of using treated effluent had been the subject of discussions for some time, the project only became reality when a drought in April 2002 resulted in water restrictions being imposed by the Gladstone Area Water Board for the first time in 30 years. Initially, a 10% reduction was requested of industrial users but, with a further decline in water storage levels in the region's

Awoonga Dam water reservoir, industry restrictions increased to 25% in November 2002.

The project involved the construction of on-site storage lagoons, a pumping station and a chlorination plant at the Calliope River Sewage Treatment Plant, 8.5 km of pipeline through the city to QAL's Parsons Point alumina refinery, and modifications to receive the water at the plant. The Effluent Reuse Scheme, combined with a number of on-site initiatives, has delivered savings in fresh water usage of approximately 3,500 ML per year – 25% of QAL's previous consumption levels. The project has saved QAL millions of dollars by avoiding production cuts and it has also protected jobs at the QAL refinery. Furthermore, it has allowed the Gladstone community to put aside plans for a \$3.5 million upgrade to its sewage treatment plant and has eliminated the discharge of secondary treated effluent into the Calliope River estuary and the Gladstone Harbour.

The Effluent Reuse Scheme is an excellent example of how a partnership approach can achieve and deliver significant short and longterm benefits to the partners, the community and the environment.



Stakeholders expect the Company to undertake conservation efforts aimed at reducing and, in some cases, eliminating industrial water consumption. Alcan's role as a large industrial user of water revolves around the scarcity of water resources and the importance of contributing to a long-lasting supply, at the lowest cost, for both Alcan and the communities, often supplying the water through the public domain.

At the same time, as we help to manage shared water resources in some communities, there are also opportunities to help treat wastewater generated by non-Alcan users in surrounding communities, thereby contributing to overall access to resources (see the Kamsar project in Community Development section of this report).

Process improvements at Alcan over the years have led to reduced consumption, and, in some cases made it possible to eliminate process water releases and to use rainwater in place of other water resources. Alcan continues to explore these opportunities to promote more efficient water use.

Land and Mineral Resources

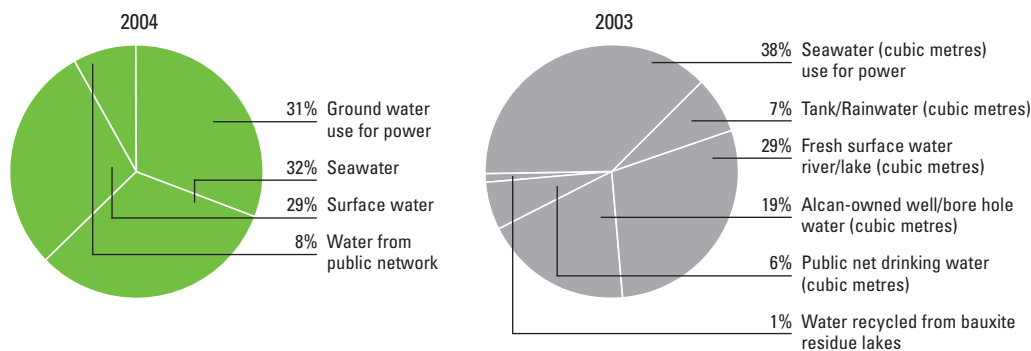
As with water, land is another critical natural resource that Alcan depends on to maintain the competitiveness of its industrial operations. To gain access to land, mineral and other resources in the future, Alcan must demonstrate responsible stewardship of the land resources it currently uses or has access to.

Land is a finite resource and has to be used in a sustainable manner. While all of Alcan's business groups use land in one form or another, Bauxite and Alumina operations require significant amounts of land to mine bauxite and, to a lesser extent, to store bauxite residue resulting from the alumina refining process.

The challenge for the Bauxite and Alumina group is how to best maximize access to high-quality bauxite while optimizing the use of existing land reserves and minimizing the footprint of its operations. In terms of land management, this means managing land used for mining operations in such a manner that it does not impact off-site areas, while protecting and

maintaining the beneficial uses of land not required for operations. As with water, there are competing uses for the land to which Alcan has access rights, including ecological, agricultural and social uses. Protecting and maintaining such beneficial uses needs to be considered for land not currently required for operations. This includes company measures to prevent the introduction of weeds, pests and plant pathogens.

Water consumption by source



Alcan's definitions of water sources were modified between 2003 and 2004.



Crazy ant site monitoring in Gove, Australia.

For example, “yellow crazy ants” have become a menace in the area near Alcan’s Gove alumina facility in Australia. These ants are considered one of the world’s most invasive species, having adverse affects on biodiversity, agriculture and, occasionally, human health. Ant populations have been discovered in 67 sites around the Gove Peninsula and surveys by Alcan Gove have indicated several populations of the ants on rehabilitated mine land. Alcan Gove has contributed AU\$100,000 plus other support for the first year of a three-year “crazy ant” eradication program in conjunction with government and other stakeholders.

Managing Biodiversity

While managing biodiversity through its own integrated EHS management system, *EHS FIRST*, and continuously improving its environmental performance, Alcan is

also seeking out initiatives to promote biodiversity in a broader fashion. As discussed in further detail in the Community Development section of this report, Alcan announced in December 2004 a new partnership with Fondation de la faune du Québec, a wildlife organization, called the “Road to Biodiversity” Project, whereby Alcan will provide funding for a biodiversity initiative developed with the community along the north shore of the Saguenay River. The project will promote the preservation of biodiversity in the region, while contributing to the development of ecotourism.

> Visit www.alcan.com/SR05 for more details

With respect to Alcan’s own operations, a critical component of the management of land resources in the Bauxite and Alumina group relates to practices at the end of a mine’s useful life. Rehabilitation of exhausted mine sites is a significant objective, and one in which community

stakeholders have significant interest and expectations. As in any mining activity, it is widely expected that rehabilitation of closed mining sites will allow for productive human or natural use once closed.

Land rehabilitation continues to be a key goal for Alcan. As discussed in last year’s Sustainability Report, Alcan has experienced great success in places like Gove, Australia where over 2,500 hectares of formerly mined land have been revegetated with local species since 1972. These achievements are in addition to activities aimed at rehabilitating and revegetating bauxite residue disposal areas as discussed in the Environmental Releases section of this report.

Another example is in the Boké region in the Republic of Guinea, West Africa, where the Company has rehabilitated the majority of mined areas with diverse natu-

TAILINGS POND REVEGETATION IN BRAZIL

A tailing pond revegetation project at MRN in Brazil has proven successful as a sustainable environmental project. Tailing ponds are reservoirs constructed in mined-out areas where bauxite residue is thickened with no addition of chemical products. At MRN, water is recovered from the thickening process and is returned to the ore beneficiation installations for reuse through a closed system. After drainage, the now-empty reservoirs are prepared for planting, using seeds of native species.

With an average annual investment of US\$2.6 million, the Tailings Reservoir Revegetation Project involves technological development and monitoring of the pond revegetation. This includes characterization of the fauna and plants, nourishing of plants, soil fertility, and selection of leguminous species potentially usable in the revegetation process.

The project is an excellent example of sustainable processes at work, benefiting the environment and the surrounding community. The return of the tailings to the mined-out area avoids the use of new areas for its storage, avoiding the deforestation of about 1,200 hectares of Amazon forest during the operation’s life span.

Additional Sustainability Examples

www.alcan.com/SR05

Primary Metal

- Water recycling reduces consumption at Alma, Quebec, Canada
- Protecting flora and fauna in Australia

ral vegetation, which will allow for future re-occupation and farming. The goal is to rehabilitate 250 hectares by August 2005 to government standards and in a fashion suitable for local land users.

It is important that Alcan progressively rehabilitate land it has used for mining activities to equal or better than its former condition. Native species protection is a key component of this action. The manner in which Alcan addresses issues associated with bauxite mining and land rehabilitation impact the Company's reputation and image. If rehabilitation efforts are not considered to be satisfactory, the Company could be subject to fines and experience a deterioration of relations with government and local stakeholders.

Overall, whether related to water or land use, biodiversity conservation is an essential component of Alcan's overall approach to environmental management and natural resource stewardship. It is integrated into both water and land use planning and management and also involves community stakeholders and their interests, often in partnerships.



Projection of what will be the Saint-Jean-de-Maurienne site after its rehabilitation.

25 YEARS OF FOREST REHABILITATION AT SAINT-JEAN-DE-MAURIENNE

In 2004, Alcan (Aluminium Pechiney) and other parties celebrated the 25th anniversary of their partnership concerning the protection and renewal of the forests in "La vallée de la Maurienne" in France.

In the past (1960 to 1980), forests in the Maurienne valley were strongly impacted by industrial fluorides emissions, mainly from the Saint-Jean-de-Maurienne smelter. A partnership was established at the time between Aluminium Pechiney, the Office nationale des Forêts (ONF) and national experts to monitor the condition of the forests around the Saint-Jean smelter.

This was followed by an agreement signed in 1991 with various concerned parties for replanting and maintenance activities. Pechiney invested over US\$900,000 between 1993 and 2003 in this venture. The ONF played an active role in the process. In addition, the shutdown of older technologies at Saint-Jean and the introduction of modern and better performing technology resulted in a significant decrease of fluoride emissions from the smelter.

Reductions of air emissions, replanting efforts and natural regeneration of the forests have all converged to vastly improve the health condition of the forests. Every year, a report on the condition of the forests is produced and published among local and regional stakeholders. Every two years, a tour of the forests is organized for all parties involved (including Alcan-Pechiney's representatives, ONF, union representatives, and various local and regional authorities).

In 2004, a plaque was unveiled by the ONF noting the contribution of the smelter in significantly reducing the effect of fluorides on the forest. The Saint-Jean smelter also sponsored "Les Championnats européens forestiers" as a mark of support for the partnership between the parties.



The challenge for Alcan as a community partner is to contribute to regional development in the most effective manner based on vastly differing community needs, while maintaining and enhancing the Company's sustainable global competitiveness.

Taking action

Community Development

4n

Key Challenges and Opportunities:

- Engage local stakeholders regardless of community size or location.
- Manage the rights to local resources in a responsible manner.
- Contribute to community sustainability through special programs and active participation.

Community Development as a key area of focus

4	Short or long term	Business groups most affected	Stakeholders most affected/involved
	Both	Bauxite and Alumina, Primary Metal, Packaging	Communities, Government, NGOs

As a company with large and diverse operations around the globe, Alcan plays a role in the community that has many dimensions and varies widely depending on the location. In some cases, the Company has relatively small manufacturing operations situated within urban industrial areas. In other, more remote locations, it has a much larger presence, particularly in bauxite mining, alumina refining and aluminum smelting operations where Alcan is often the largest and most important economic, environmental and social partner.

In some instances, such as at Kitimat in British Columbia, Canada, Alcan's investment in this remote area in the 1950s spawned what has become a thriving community. With a presence that includes extensive hydroelectric power facilities and aluminum smelting operations, Alcan plays a significant community development role in terms of employment, local skills development, taxes and royalties paid, and the purchase of local goods and services. The Company also contributes in other ways such as local infrastructure development and maintenance of ports, roads and medical facilities.

In many communities, Alcan's presence is a result of rights to natural resources that have been secured over the years, the most important ones being long-term water rights to produce hydroelectric power and long-term land use rights to mine bauxite. In some communities, we are a significant land owner as well. Alcan supports this privileged presence with a strong level of corporate social responsibility.

Community development is complex and challenging. It involves more than investing dollars in a community. It requires working with diverse stakeholders to identify community needs and locate the intersection of Alcan's interests and those of the community. When this is done, Alcan can effectively leverage the full range of its resources, including its knowledge and the skills and talents of its employees. Furthermore, needs vary depending on location and the local situation. While economic and employment issues may be the top priority in one part of the world where we operate, other communities may be struggling with basic issues such as access to housing, education and health care.

Regardless of where Alcan operates, the goal is to ensure that it is a welcome community partner.

Regardless of where Alcan operates, the goal is to ensure that it is a welcome community partner.

Landcare during preparation of garden beds at the accommodation village in Gove, Australia.





Managing Change

As a major employer in many communities, there are strong expectations for Alcan to maintain and enhance employment opportunities. This is particularly true in remote areas, where the Company is often the single largest employer, as well as in regions economically dependent on a limited number of industries.

Alcan operates in a very competitive and rapidly evolving global business environment. Shifts in markets and technologies as well as shifts in stakeholder interests themselves have created an environment in which our operations must adapt and change. And while change represents opportunity, it can also be disruptive for communities and those individuals affected. Effectively managing this change is a critical issue for Alcan and for the communities that have traditionally relied on the Company's presence as an engine of economic and social growth.

In primary aluminum smelting in particular, investments in new technology such as smelter prebake technology have resulted in much more efficient operations, which has helped to reduce GHG emissions, reduce operational costs and increase the Company's competitiveness. It has also resulted in significant reductions in workforce requirements. This presents an obvious challenge for Alcan and the communities dependent on employment related to primary aluminum smelting.

Unfortunately, long-term sustainability sometimes means making some difficult decisions with respect to site closures. The decision made by Alcan in 2004 to permanently close its Söderberg potlines at Arvida Works in Quebec, Canada, was a difficult one for employees and the surrounding community. The case highlights the challenge of closing older operations that have higher emissions, while staying competitive in an international commodity market and addressing issues of local communities and stakeholders.

Although from a business perspective it was an environmentally sound and economical decision, the pending closure was a worry for affected Arvida employees and for the population of the Saguenay–Lac-Saint-Jean region. Alcan worked in close cooperation with local stakeholders to evaluate the best opportunities to avoid laying off any employees while minimizing impacts on the community's continued prosperity.

> Visit www.alcan.com/SR05 for more details

Investing for a Sustainable Future

To remain competitive, Alcan must carefully analyze its investment prospects on a global basis. This involves considering a number of critical elements in the decision-making process to choose the best and most sustainable investment options.

These elements include the availability of low-cost energy, capital and construction costs, and the local availability of a skilled and competitive workforce.

Environmental objectives must also be taken into account for both existing and new investments. While new investments to replace older technologies include a number of environmental benefits, they also tend to be much less labour-intensive. Furthermore, the best location for new investments and expanded capacity may not be in those locations already challenged by industry shifts and global competitiveness.

Alcan must review all of these factors to ensure that investments take place where they are most sustainable in the long term. Communities are impacted by these decisions, and Alcan and its stakeholders are collectively challenged to find sustainable solutions to minimize any negative impacts.

Although most communities welcome responsible investment by companies like Alcan, new projects almost always have a few unique challenges or concerns.

In addition to stakeholder expectations on the economic role that Alcan plays in the community and the social impacts of this role, stakeholders also expect Alcan to act as a responsible citizen in a broader social and environmental context. As a major partner in many communities, Alcan seeks out opportunities to join local partnerships that will benefit the Company and the community. Being a good “corporate citizen” means being a partner that genuinely cares about the future of the region, including the health and safety of its population and quality of life in general.

Community Partnerships

Respect for local culture is an important element of a responsible approach to community development. Building effective relationships that respect local cultures and specific needs, whether they are in the developed or developing world, is a fundamental component of this approach.

Community communication is an often overlooked yet simple strategy to promote the Company’s efforts to ensure the com-

munity’s sustainable future. In France, at the Montricher electrometallurgy plant (silicon), an annual EHS Report has been distributed to local elected representatives since 2002. In 2004, this was followed up by a plant visit by authorities, during which the plant’s challenges, achievements and performance were discussed. Montricher employees were motivated by the activity and participating community members expressed positive feedback regarding the EHS report and the plant visit.

In the Bauxite and Alumina group at Compagnie des Bauxites de Guinée (CBG), a wastewater treatment project is currently under way for the city of Kamsar. At the moment, a little over half the population of 100,000 is connected to the sewage system; the project will increase the treated sewage volume by 50% which may allow an additional 8,800 individuals to benefit by the project by mid-2007. The project involves the replacement of some existing pipes, the construction of new pumping stations as well as treatment stations. Alcan’s investment in the project through CBG is an estimated US\$6.3 million.

Upon completion, the residents of Kamsar will benefit from an efficient wastewater treatment system, CBG will have complete control of environmental impacts management on site and the treated water will be reused by the CBG plant as process water.

At the Alcan Composites site in Shanghai, China a reflecting mirror at the road corner behind the facility has improved visibility on the only access road to the immediate neighbouring community. Adjacent to the site, there is a narrow road with a turn where traffic accidents often took place. Because of the twist in the middle of the road, the vehicles or bicycles approaching from opposite directions cannot see each other – often resulting in a collision. Alcan Composites Shanghai volunteered to set up a corner mirror at the turning point, greatly improving visibility and resulting in a significant reduction of traffic accidents.

WORKING WITH STAKEHOLDERS IN ORISSA, INDIA

In Bauxite and Alumina operations, the cycle of investment and growth, coupled with the necessity of eventual mine closure, are as much key sustainability challenges for Alcan they are as for its operating communities. In some cases, construction of a new facility requires relocation of people living in the area to be developed, as is the case with the proposed Utkal bauxite mining and alumina refining project in Orissa, India, in which Alcan is the minority shareholder.

While the mine would be built on an uninhabited plateau, the refinery would lead to the relocation of about 147 families. As part of Indian law, and negotiated via a stakeholder consultation process, all project-affected people would be eligible for benefits stemming from a mutually agreed upon rehabilitation and resettlement package. In this case, the project would also include a newly constructed residential worker community equipped with schooling, medical and water treatment facilities.

Before Alcan moves forward with the project, a number of criteria must be met, including ensuring that the project meets the test of broad community support. Alcan understands the importance of balancing growth and profit with the needs of its stakeholder groups. Alcan is committed to establishing a deeper understanding of local stakeholder issues and securing the needed stakeholder support for this project.



WORKING WITH FIRST NATIONS IN BRITISH COLUMBIA

In British Columbia, Canada, Alcan's significant assets include a large dam and reservoir, a 16 km tunnel through a mountain, an 850 MW power generation facility, an 85 km transmission line through the Coast Mountain range and a 275,000 tonne capacity aluminum smelter. Prior to Alcan's entry into the remote region, the river and lake systems were only inhabited by First Nations communities who used the vast forests and mountain ranges to secure a source of food and to practise traditional activities.

Although the relationship between First Nations communities and Alcan was not always harmonious, over the past decade the dialogue has evolved and matured. Today, both parties understand each other and have established a mutually beneficial working and cooperative relationship. The First Nations have been able to sustain environmental values, protect their cultural beliefs and traditions, and stimulate economic opportunities. Alcan has enhanced the productivity and efficiency of its B.C. operations in the watershed by reducing costly delays and streamlining efforts to accomplish business objectives.

For example, in 2004, four internships were created for members of the Haisla First Nation in Alcan's environmental services department. This provides Alcan with improved insight and appreciation of Haisla interests. For the First Nations, the jointly developed Environmental Intern Program allows the participants to enhance their capacity, expertise and knowledge of the sustainability challenges and opportunities facing Alcan in the region.

Another significant project launched in 2004 is Alcan's involvement with the Cheslatta Carrier Nation, the Nee Tahi Buhn Indian Band and the Skin Tye Nation. Known as the Alcan-Three Nations Forest Stewardship Initiative, the cooperative goal is to attack the serious infestation of certain forests by the Mountain Pine Beetle.

Benefits include:

- Creation of 25 to 30 jobs in the forest sector and development of forest-harvesting capability in local First Nations communities.
- 1,200 hours of practical forest management training for workers through a mentorship program.
- Annual harvesting of 100,000 cubic meters of infested pine trees for the next four years and implementation of a silviculture program to ensure that Alcan's lands are managed in an environmentally sustainable manner.
- A strengthened relationship among the four parties.
- Creation of a legacy fund for First Nations residents and local communities to help launch social, environmental and economic projects in the region.

Although harvesting the trees does not stop the beetle, the affected dead trees represent a fire hazard and a potential lost resource if not harvested.

Stakeholders expect Alcan to play a larger role in support of broader community, economic and environmental interests and initiatives in areas such as regional job creation, biodiversity, ecotourism and recreational access to company-owned lands.

For example, in Quebec, Canada, Alcan and its community partners announced the creation of more than 750 jobs in the Saguenay-Lac-Saint-Jean region in 2003 and 2004 through a variety of initiatives.

The Saguenay region was chosen in April 2004 as the site for an office dedicated to industrial development in all regions of Canada. Furthermore, Alcan re-positioned its Dubuc plant in the Saguenay region to reinforce its presence in the community.

On the social side, there are also broader community quality-of-life issues in areas such as poverty, disaster relief, education, recreation, and local sports and arts. For example, after the devastating tsunami in Southeast Asia in December 2004, Alcan created a relief-matching program with employees that raised CAN\$1.2 million for aid to victims. Alcan operates seven facilities in Southeast Asia with some 4,400 employees.

Other social initiatives include a program at the Singen plant in Germany aimed at needy children, the donation of 5,000 trout by the Pierrefitte plant in France to help preserve local fauna, and the nurturing of 25,000 baby turtles in the Amazon by MRN. Another initiative involves employees at the Food America's flexible packaging plant in Joplin, Missouri. The two-year old program is aimed at heightening youngsters' awareness of the importance of world-class safety programs in the workplace. The program includes personal safety as well as information on safe packaging design.

> Visit www.alcan.com/SR05 for more details

In addition to this significant support provided by Alcan's four business groups around the world, Alcan Inc. also contributed CAN\$9.4 million throughout 2004 to these and other community projects under its Community Investment Program (more details on this program can be found in the Managing for Sustainability section). Total Alcan contributions in 2004 were CAN\$ 13.1 million.



CHILD HEALTH IN GHANA

Alcan's Ghana Bauxite Company Limited (GBC) operates a Maternal Child Health Clinic in the community and also participates in a national immunization program where vaccines, needles, syringes and monitoring are all part of the service. In addition to supplies, GBC provides the services of its senior medical officer and human resources manager to assist with the programs.

The Maternal Child Health Clinic was put in place to improve the survival rate of mothers and their new-borns. Nursing mothers receive assistance, the babies are monitored for weight gain and other indicators, and vaccines are provided.

Of the six potentially fatal diseases vaccinated against, there have been no reported cases in the district for the past 10 years. Furthermore, the mortality rate for delivering mothers has dropped to zero and the survival rate for children five years of age and younger has increased dramatically.

Additional Sustainability Examples

www.alcan.com/SR05

Bauxite and Alumina

- MRN nurturing Amazon Chelonia (turtles)

Primary Metal

- Support for research into hereditary diseases in Saguenay-Lac-Saint-Jean
- Development of Nérée and Poléon Lakes near Grande-Baie smelter

Engineered Products

- Support to local school children at Singen in Germany
- Getting involved in community activities at Issoire in France
- A drawing contest for children of employees on the theme "saving the earth" at all Alcan facilities in Ecuador

Packaging

- Beauty centres in hospitals help patients in France
- Innovative community involvement program with school children in Joplin Missouri, U.S.



Due to the manufacturing nature of many of Alcan's operations and processes, and the use of toxic or potentially dangerous materials, long-term sustainability requires a consistent and effective strategy to ensure the well-being of employees, contractors, suppliers, customers and communities at all installations, regardless of location.

Taking action

Well-Being

Key Challenges and Opportunities:

- Ensure a safe and healthy environment for employees, contractors, suppliers, customers and communities.
- Continue risk identification efforts and health studies.
- Encourage stakeholder engagement on occupational and community well-being.

Well-Being as a key area of focus

5	Short or long term	Business groups most affected	Stakeholders most affected/involved
	Increasingly important in future	All	Employees, Communities, Customers

Alcan considers well-being in very broad terms to the benefit of many stakeholders. While it includes occupational health and safety, the concept of well-being at Alcan also includes a focus on broader employee issues such as work-life effectiveness, mental health, smoking, and employee fitness. And, while it includes the direct impact on employees, suppliers, communities and consumer health, well-being is also an area where Alcan recognizes its role as a contributor to making progress on broader community issues, whether they be HIV/AIDS or other diseases prevalent in the community. Rigorous practices in health and safety contribute to the competitiveness of each individual plant, and therefore to Alcan as a whole, providing opportunities for greater efficiencies, collaboration and partnerships. Although addressing a diverse range of challenges may add to operating costs in the short term, an all inclusive approach to well-being supports a sustainable future and the Company's license to operate in the long term. This provides for greater employee commitment and stronger acceptance of Alcan's presence within the communities and jurisdictions in which it operates.

Rigorous practices in health and safety contribute to the competitiveness of each individual plant.

EHS FIRST Performance and Employee Engagement

In terms of employee and contractor safety, Alcan's manufacturing operations represent a variety of potentially high-risk exposures, including, but not limited to, working in confined spaces, high-speed processes, mobile equipment and overhead cranes. The nature of the operations also requires the use or creation of a wide range of materials and substances, many of which are hazardous and need to be managed effectively. This operating environment is made more complex by a wide range of local conditions, including a variety of health and safety regulations, as well as stakeholder interests and expectations.

Occupational health and safety, along with the environment, are top priorities in all business groups, as illustrated in the company-wide implementation of *EHS FIRST*, Alcan's environmental, health and safety management system. No matter the location or nature of the work performed, *EHS FIRST* applies at all sites in all Alcan business groups and is aligned with ISO 14001 (environmental standard) and OHSAS 18001 (occupational health and safety standard).

By the end of 2004, all pre-Pechiney Alcan sites had achieved the Company goal of full compliance with these standards. Former Pechiney sites have until April 2006 and all newly acquired sites have two years to comply. At the start of 2005, 60% of all Alcan sites (combined Alcan and Pechiney) were certified to ISO 14001 and 53% to OHSAS 18001.

ISO/OHSAS certification sites registered in %





Lab at Hunter Medical Research Institute where the Tomago smelter in Australia has been financially supporting medical research into asthma.

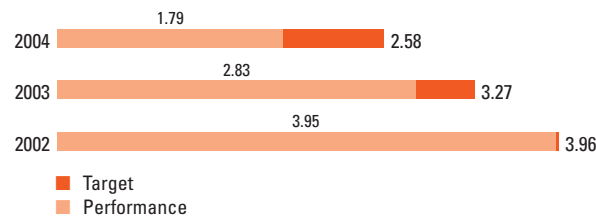
Health and Safety

An integral component of this approach to sustainability involves addressing issues related to health and safety. At Alcan, protecting employees against injury and illness starts with the employees themselves, whether it is through Behavioural Based Safety initiatives or discussions at regular team safety meetings. In the Packaging group, a behavioural audit program encourages employees at all levels to analyze their work practices and identify those that are the least safe. Once the initial awareness phase is completed, responsibility for these analyses and for the subsequent behaviour modification will be shifted to the employees themselves, without any need for further management intervention.

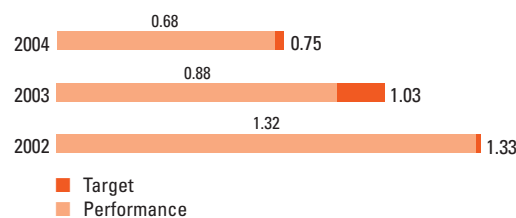
Line management involvement is a key company-wide driver of *EHS FIRST* implementation and acceptance at the plant level. In 2004, over 90 managers' training sessions were held, reaching some 2,000 participants who will continue training others and advocating EHS awareness down the line.

Innovative approaches to *EHS FIRST* awareness at the plant level include "Health Days" at Bauxite and Alumina's alumina plant in Vaudreuil, Quebec, or President's Safety Days in our Engineered Products group. During "Health Days", which are timed to coincide with periodic medical examinations, employees are given the opportunity to refresh their knowledge about protective equipment and are provided with information on the various programs dealing with personal health issues.

Recordable case rate per 200,000 hours worked



Lost time injury/illness rate per 200,000 hours worked



Days lost rate* per 200,000 hours worked



* Performance

The Bonsai Awards are an initiative of Packaging to encourage, promote and reward best internal practices in areas related to EHS. Projects selected come from all over the world. They are all quite different and the variety reflects Packaging's desire to act at all levels. The bonsai tree was chosen to symbolize the award, as this special tree grows and develops in a continuous fashion as long as it is attended to in a constant and meticulous manner. This corresponds entirely to the underlying theme of Alcan's *EHS FIRST* management system.

Alcan insists on instilling a safety mindset and strives to implement best practices to ensure health and safety. For example, Packaging has identified lacerations as the area where the greatest improvements could be made to reduce historically high recordable/lost time rates in its Glass Tubing business unit. As a result of a Laceration Assessment Project launched in

2004, recordable lacerations were reduced by over 40% in the Glass Tubing group in addition to a reduction in first aid cases.

In 2004, the first full year of *EHS FIRST* implementation, company-wide results showed a 33% improvement in the lost time injury/illness rate and a 37% improvement in the recordable case rate.

Reminders of the occupational risks present in a heavy manufacturing environment, however, are tragically illustrated in the four fatalities that occurred among employees and contractors at Alcan operations in 2004, three of which involved mobile equipment.

Although Alcan has made significant progress in identifying at-risk situations and implementing corrective measures, these fatalities signal the need to diligently continue to identify root causes and quickly eliminate them. Operating mobile equipment carries certain risks. Alcan has

rigorously assessed these through the completion of a fact-based analysis of mobile equipment risks in order to prevent further fatalities. As a top priority in 2005, the Company is implementing the recommendations that came from the analysis along with the creation of a senior resource position to further enhance *EHS FIRST*'s capacity and capability to prevent fatalities.

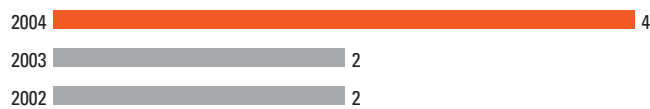
Leadership in Action

Alcan aims to demonstrate responsibility, leadership, innovation and action in its approach to well-being. Employees, contractors, suppliers, customers and the immediate and broader community are all stakeholders in this commitment. Management support at all levels of the organization is imperative for success, including role modelling of *EHS FIRST* procedures.

Alcan endorses an aggressive approach to identify dangers, evaluate risks, and implement corrective measures aimed at preventing accidents, injuries, occupational diseases and other harmful effects on health. This includes taking a long-term approach to health monitoring such as screening employees for potential occupational exposures in the past, when present day protective measures may not have been in use.

In Canada, where Alcan has operated for more than 100 years, cooperative studies have been conducted on lung and bladder cancer among potroom workers involved with certain tasks that resulted in high PAH exposure in the 1940s through to the 1960s. The studies, undertaken with external partners, revealed a higher than average rate of lung and bladder cancer among these workers. Studies also showed that the larger proportion of excess lung cancers in potroom workers was attributed to tobacco smoking.

Number of fatalities



Number of fatalities rate

per million hours worked



Despite the improvement in general safety indicators, serious injuries and fatalities remain a concern. A 2004 initiative has targeted mobile equipment. An action plan is being actively implemented across Alcan to upgrade plants and people behaviour requirements to a common enhanced standard. In 2005, key resources are applied both at the business group level and at the corporate level to prioritize *EHS FIRST* activities (Document Management, Strategic Planning, Audits, Communication and Training) and to focus on serious injury and fatality prevention.



Management observations
at Arvida Works in Quebec, Canada.

REDUCING INJURIES AT PRIMARY METAL

The proactive involvement on the shop floor of managers and supervisors at Arvida Works in Quebec is considered a key contributor to the 35% reduction in total injuries and the 55% reduction in recordable cases. With some 2,000 management observations per week, the plant's Leadership in Action program also resulted in on-the-job training, "housekeeping" tips and improved dialogue and communication. Since 2002, Arvida has reduced the total number of injuries by 50%.

At nearby Alma Works, a 50% reduction in recordable injuries in 2003 was followed by a repeat performance – no serious injuries were recorded at the smelter in 2004. A key factor in this excellent result was management's initiative in reviewing all incidents and implementing corrective action as required. To follow up, 10 risk management groups were put in place (72 people in total) covering most of the plant's sectors.

Furthermore, the observation of regular workplace activities, monthly meetings with employees on various health issues and welcome sessions with contractors and suppliers are all standard procedures.

Since 2000, a new epidemiological study is underway that involves close to 17,000 current and former potroom workers. The study is expected to show a direct link between reduced lung and bladder cancer and the Company's significant success at reducing PAH emissions over the past few decades and providing improved employee respiratory protection. Results are anticipated by the end of 2005.

This type of commitment complements the Company's strategy to ensure that new acquisitions and projects coming on stream are able to meet its global standards for health and safety excellence. This is the case at the Ningxia smelter joint venture in China. In mid-2004, Alcan successfully introduced *EHS FIRST* to its two Chinese partners in the Ningxia project – Qingtongxia Aluminium Group Company Limited and Ningxia Electric Power Development and Investment Co. Ltd. The goal was to develop a worldclass smelter and raise the existing performance standards to Alcan's *EHS FIRST* requirements. To date, both management and employees have been extremely receptive, demonstrating the EHS excellence that Alcan brings with it as a company operating in China.

Community Engagement

The Alcan approach to employee health and safety goes far beyond the plant walls, as illustrated in numerous local community Health and Safety days, anti-smoking programs, assistance in the area of mental health or personal issues, and action on global concerns such as HIV/AIDS. For example, Alcan Composites Shanghai invited a professor from the Shanghai Medical College Fudan University to give employees a presentation about AIDS/HIV prevention and life style improvement.

At the Tomago smelter in Australia, \$400,000 has been raised through a matching Tomago-employee contribution program over the past 18 years in support of local charities. Of special note is the financial support of \$20,000 in 2004 to the Hunter Medical Research Institute to support medical research into asthma.

John Hunter Hospital is the largest teaching hospital in the region and between 30% and 40% of all asthmatics admitted to this hospital have noneosinophilic asthma. The Institute is the first in the world to carry out research into this new form of asthma, and is looking into what causes it and how this type of asthma can be properly treated. Tomago Aluminium is being kept informed of the research progress. Trial testing of a new antibiotic targeted at the inflammation involved in noneosinophilic asthma is now being conducted.

Benefiting from the research are local authorities, medical resources, all regional and local asthma sufferers and Tomago Aluminium's employees as residents of this community. Furthermore, this invaluable research has wider implications for asthma sufferers throughout the world.

FIGHTING HIV/AIDS IN SOUTH AFRICA

At Silicon Smelters in South Africa, an HIV/AIDS management system has been put in place. The program, in place since 1999, encourages employees to undergo voluntary counselling and confidential testing.

Program initiatives include:

- With the aid of “rapid HIV testing kits” purchased by the Polokwane plant clinic in early 2004, 52 employees were tested. Three were unfortunately diagnosed as being HIV positive.
- The Polokwane clinic was involved with the National Association of People Living with AIDS and the local welfare organization. A substantial donation was made by the plant in the wake of fundraising events organized by Silicon Smelters and a local charity.
- Peer educators (employees) are trained and given material as part of the HIV prevention program in the plant and some go out to the communities to provide education regarding the prevention of AIDS.

- Silicon Smelters was interviewed by the local broadcasting station on the management of HIV in the workplace, following a recommendation from the local HIV/AIDS Centre.
- A “Wellness Competition” was organized in October 2004 to encourage employees to learn their HIV and diabetes status, as well as their cholesterol levels.

In addition to the above, Silicon Smelters employees all belong to a medical aid program that is recognized as being one of the best in terms of HIV/AIDS management. All HIV positive employees are closely monitored and receive antiretroviral treatment (if needed) as part of the medical aid initiative.

The results show that Silicon Smelters has a lower incidence of HIV/AIDS cases than the provincial average. The smelter operation is seen in the community as a responsible organization in managing EHS. Through helping the community by fighting HIV/AIDS, this program has contributed to improving the health of the community as a whole and securing a stable workforce.

In Canada, Alcan provides support for research into hereditary diseases that are specific to the Saguenay–Lac-Saint-Jean region, an area where Alcan has significant installations. Between 2003 and 2006, an Alcan employee has been assigned a full-time mandate with the Corporation de recherche et d’action sur les maladies héréditaires (CORAMH) to facilitate community awareness of these diseases. In 2004 Alcan’s involvement played a major role in mobilizing the region to this cause through various efforts that resulted in contact with over 10,000 members of the community, including some 7,000 students.

Alcan has also responded to heightened security concerns and is meeting the challenge of ensuring that the application of new national and international security norms are implemented to protect the safety of employees and communities, while safeguarding business operations. This includes new security measures adopted in 2004 at the Company’s harbour facilities in Port-Alfred, Quebec, in conjunction with measures proposed by the International Maritime Organization. Alcan invested CAN\$800,000 to augment the site security with modifications to existing infrastructures and work habits at the facility.

Additional Sustainability Examples

www.alcan.com/SR05

Bauxite and Alumina

- Health Days at Vaudreuil plant in Canada
- Update to Hazardous Materials information system

Primary Metal


- Increased contractor safety at Sebree in the United States
- Reduced occupational health risks at smelter in South Africa
- New safety record at ALUCAM in Cameroon
- Improved visibility of mobile equipment
- Reduced PAH exposure at Anglefort plant in France
- Improved traffic safety in China
- Reducing trachoma eye disease in Qingtongxia China

Engineered Products

- Improved visibility for Singen workforce
- Improving street corner road safety in China
- Alcan Cable responds to impact of Hurricanes Charley and Frances
- Anti-smoking campaign at Issoire in France

Packaging

- Health at work at Plouhinec plant in France
- EHS Day for Sélestat community in France



As part of Alcan's environmental, health and safety management system, environmental releases present a number of challenges due to the wide variety of air, land and water issues related to the diverse operations of the Company's four business groups.

Taking action

Environmental Releases

Key Challenges and Opportunities:

- **Bauxite and Alumina:** dust, bauxite residue, marine impacts, caustic soda.
- **Primary Metal:** dust, polycyclic aromatic hydrocarbons (PAHs), fluorides, oil residues, spent potlining.
- **Engineered Products:** minimization and recycling of used aluminum (including customers' used materials), volume reduction and sustainable disposal of solid waste, rolling oils, emulsions, and caustic soda.
- **Packaging:** volatile organic compounds (VOCs), hazardous solid waste, solid waste, recycled material.

Environmental Releases as a key area of focus

6	Short or long term	Business groups most affected	Stakeholders most affected/involved
	Both	Bauxite and Alumina, Primary Metal, Packaging	Communities, Government

As illustrated in the process flow diagrams on page 5 of this report, Alcan's industrial activities generate a number of environmental releases. The Company's approach to managing these releases is an integral part of the *EHS FIRST* management approach. All Alcan sites are required to have a program for the management of environmental releases that conforms to the ISO 14001 standard. It is broad in scope and covers releases to air and water at all Alcan sites to minimize potential environmental impacts, material losses and operational costs, while conforming to all applicable regulatory standards. This includes a thorough analysis of all process inputs and outputs as well as awareness of both on-site and off-site impacts associated with the environmental releases. After evaluating the significance and the potential for improvement, priority objectives and targets are set.

Within *EHS FIRST*, specific emphasis is placed on the management of waste, with standardized requirements for all sites for monitoring, segregating, handling, storage and treatment. The sites must evaluate waste minimization options such as recycling, technological improvements, changes in material inputs, improvements to operating practices and processes, and product design.

With the reinforcement of environmental regulations and greater public concern about the potential impact of waste sites and landfill sites, companies like Alcan must operate and/or use third-party sites that are appropriately designed to prevent impact on the environment. Consequently, Alcan recognizes its responsibility to reduce at source the waste sent to such sites, while ensuring that all Company sites are managed in such a way that environmental protection is a constant priority. Internal policy dictates that waste disposal sites that cannot comply with environmental regulations must be closed and rehabilitated.

Due to the process-specific nature of environmental releases (including waste), key issues, challenges and successes will be discussed on a business group basis.

Environmental events

total number of minor events



The increase in environmental events can be attributed to the Pechiney acquisition. Pechiney implemented incident reporting in 2004.

The Alcan share of 2004 minor events is 180, a very significant decrease compared to 2003.

Environmental events rate

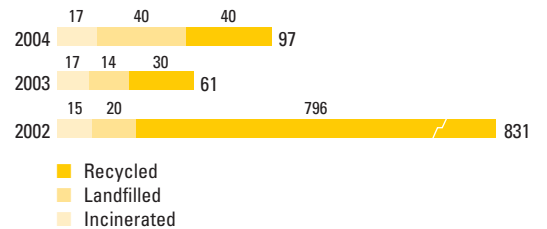
minor events per million hours worked



Minor environmental events result in minor or no harm or injury to any person or wildlife and insignificant damage to habitat. The impacts, if any, are temporary in nature, with total restoration occurring in a short period of time. No major environmental events occurred during the reporting period.

Total hazardous waste

in thousands of tonnes



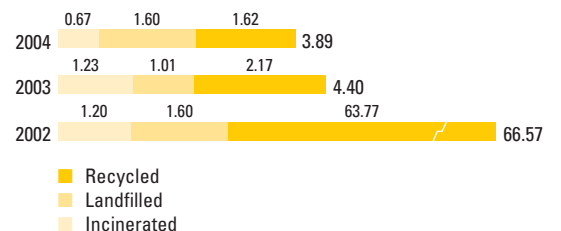
The increase in total 2004 hazardous waste tonnage compared to 2003 is attributable to the Pechiney acquisition.

Total hazardous waste trends vary as specific substances are subject to regulatory changes and individual country classifications. For example, Alcan data in 2003 shows a large decrease over 2002 due to residue disposal pond returned supernatant liquor at the Gove Australia refinery being declassified as hazardous waste in 2003.

Bauxite residue is excluded in 2003 and 2004 and is now reported separately.

Total hazardous waste rate

in tonnes of hazardous waste per million US\$ sales



Bauxite and Alumina

Apart from land use associated with bauxite mining, which is discussed in the Natural Resource Stewardship section of this report, the Bauxite and Alumina group's key environmental challenges include controlling dust and managing waste emissions such as bauxite residue.

Dust

Dust control is an area of focus in bauxite mining and alumina processing, as it can potentially impact employees and communities due to airborne particulates. While associated health impacts are taken very seriously by Alcan, another area of concern is the settling dust that can mar the appearance of the surrounding worksite and community. Recovery of the dust however is value adding in that it can be added back into the bauxite production, a resource otherwise lost.

As an example of advances being made in this area, the Compagnie des Bauxites de Guinée (CBG) has introduced gas scrubbers at its plant. As a result, dust emissions are now being collected from the gas stream and bauxite is being recovered for reuse. Prior to this, some 50 tonnes of dust from bauxite ore dryers was being released into the air every day. The goal is to reduce the dust emissions to 500 mg/Nm³ in phase I, and then down to 50 mg/Nm³ in phase II, a World Bank standard. Phase I is expected to be completed by June 2005, and phase II, by 2007. Recovery of the airborne dust will not only clean up the surrounding worksite and community, it will also return the great majority of the dust to the bauxite production.

At the QAL alumina facility in Australia, investments in 2003 and 2004 resulted in significant improvements in dust emissions. A new calcination plant has produced a 95% reduction in alumina dust emissions; fly ash emissions have been reduced from 80 mg/Nm³ to less than 10 mg/Nm³; dust emissions from unloading coal trains was dramatically reduced; and capital projects were started to reduce alkali emissions.

Bauxite Residue

The bauxite refining process generates large quantities of bauxite residue as the mixture of water, inert residues (including iron oxide, which results in the red colour) and diluted caustic soda remaining after the alumina is extracted from the bauxite. Bauxite residue is the largest environmental concern of alumina refineries due to its volume and alkalinity. Limited storage space for bauxite residue has heightened the need to develop sustainable alternatives for its use or disposal.

With this focus, the group has established general goals to minimize the quantity of residue per tonne of alumina produced; minimize the soda content in any residue sent to disposal sites; and, keep the size of disposal areas to a minimum and rehabilitate them as early as possible.

Alcan aims to deliver on stakeholder expectations through ongoing demonstration of improved performance in managing bauxite residue, and these perceptions are important to Alcan's reputation. Substantial efforts have been made to improve disposal technologies and practices and major improvements have been achieved, such as a unique process in Vaudreuil, Quebec where the materials used to build dikes to store bauxite residue have actually been replaced by bauxite residue. This has diverted a significant percentage of the bauxite residue that needs to be stored.

RECYCLING CAUSTIC SODA

Caustic soda is used in the chemical process to dissolve the alumina contained in bauxite. Bauxite residue, which is the main residue of the Bayer alumina refining process, contains certain amounts of caustic soda.

In 2004, Alcan's Vaudreuil Works alumina plant in Canada initiated improvements to the process for cleaning bauxite residue. This has resulted in the recovery of a large volume of caustic soda that can then be reused in the Bayer process before the residue is sent to the disposal site at the Jonquière Complex.

Better adapted equipment and the implementation of advanced residue washing control strategies resulted in this advance, which translates into significant savings in terms of Vaudreuil Works' annual caustic soda consumption. In 2004, 22% more caustic soda was recovered at this stage of the process than in 2003.

This is a good example of how a sustainability-driven solution can have both economic and environmental advantages.

Water monitoring at the salt water outlet in Gove, Australia.



ALCAN GOVE MARINE HEALTH MONITORING PROGRAM

In 2004, Alcan Gove commenced a Marine Health Monitoring Program (MHMP) for southern Melville Bay. The program's current partners are the Australian Institute of Marine Science, Charles Darwin University, NT Fisheries – Aquatic Pest Management Group, Dhimurru Land Management Aboriginal Corporation and Yirrkala Dhanbul Landcare Department.

The MHMP is a process, not an end result. It is a collaborative, adaptive management strategy with flexibility for review and continuous improvement as knowledge and understanding of the environment increases. It is both an ecological risk assessment of the impacts of Alcan Gove operations on Melville Bay as well as an assessment of internal environmental performance. The program recognizes that ecological risk includes scientific assessment and community perception, as well as the incorporation of legal and other requirements.

MHMP is an ongoing activity that incorporates all previous and current marine environment work that has been or is being carried out by Alcan Gove. It provides the framework for a holistic view of the system and allows Gove to prioritize projects to close knowledge gaps in a cost-effective manner. It will also provide information that will allow internal pollution control response to environmental risks to be properly identified and prioritized.

Among the steps taken in 2004, a workshop was held with local government to define the scope of the program and obtain its input and support, and routine surveillance monitoring of the marine environment was implemented.

Furthermore, efforts have also been undertaken to find alternative uses including the extraction of valuable materials and/or the development of commercial and sustainable applications/products.

Two other examples of bauxite residue management are improvements in residue disposal technology and stacking at Vaudreuil Works in Canada, where a 50% reduction in the disposal area has been achieved and, at Gardanne in France, where a product called Bauxaline shows promise in road construction and as ground cover for waste disposal sites (see 2004 Sustainability Report for details).

Though it remains a challenge for the global aluminum industry, the group continues to explore these and potential technical solutions to find new applications and products for bauxite residue. Due to the often-remote locations of our operations, transportation

costs for potential customers are a factor when assessing the economic viability of using bauxite residue in their business. It is part of Alcan's strategic plan to continue efforts in this area, including better management of volumes generated and their disposal, as well as treatment of disposal and developing alternative applications.

Marine Impacts

Some of our bauxite and alumina facilities operate in very close proximity to salt water marine environments.

The ecological risks to the marine environment associated with potential impacts from these operations are a key issue for both Alcan and its stakeholders. Alcan manages these potential risks by taking a holistic view of marine systems from all perspectives and potential company impacts, thereby allowing for the proper identification and planning for internal control responses to these environmental risks.

Bauxite residue

in millions of tonnes



The increase in bauxite residue in 2004 is mainly due to the Pechiney acquisition.

Bauxite residue rate

in tonnes of bauxite residue per tonne of alumina hydrate produced



Excludes bauxite residue from joint ventures outside of Alcan's internal reporting system.

Primary Metal

Alcan's Primary Metal Group manages a range of environmental releases, including dust, polycyclic aromatic hydrocarbons, fluorides, oil residues, and spent potlining.

Spent Potlining

Spent potlining (SPL) is the main waste residue generated by the reduction process in the smelters. It consists of the internal lining of the pots, which is replaced after five to seven years of use. SPL is classified as hazardous waste by many jurisdictions worldwide due to its toxicity and explosive nature.

With the potentially leachable materials that it contains, SPL must be managed carefully. Finding alternatives to landfill disposal has been widely recognized as one of the ongoing sustainability challenges facing the global aluminum industry today.

Aluminum producers are seeking the best environmental solutions to treat spent potlining and, as discussed in last year's report, Alcan has developed and tested a spent potlining treatment process known as the Low Caustic Leaching and Liming (LCLL) process. This SPL treatment solution combines a series of processes already used by Alcan and treats the waste material efficiently so the SPL can be recycled into usable by-products. In 2004, the Company commenced detailed engineering studies and project cost evaluations on a full-size pilot SPL treatment facility intended to be built in the Saguenay–Lac-Saint-Jean region of Quebec.

Other forms of waste residue in the Primary Metal group include refractories generated in the anode baking process.

> Visit www.alcan.com/SR05 for more details



MANAGING SPL IN AUSTRALIA

The Tomago smelter in Australia, (Alcan 51.55% ownership) seeks to manage wastes and residues in the best ways to reduce the environmental footprint and provide acceptable social and environmental solutions.

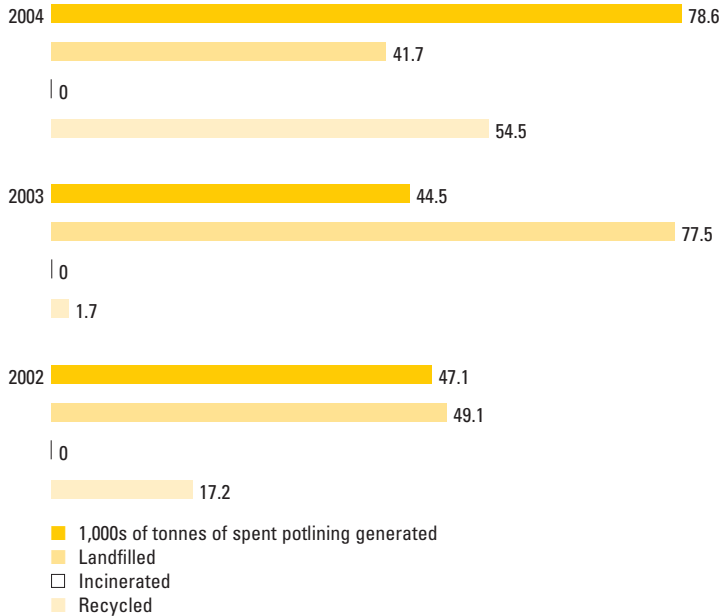
This sustainable approach was demonstrated in 2004 with a plan to export SPL to Italy, where it is reprocessed for use in other industry applications. Many employees were involved in the successful export of the SPL, which required diligent planning and targeted consultation with all stakeholders. This included local, national and international authorities charged with administering the safe movement of hazardous wastes, local residents and community members concerned with storage and transport of wastes, employees and contractors involved in preparing and transporting of the material, as well as port operations and shipping personnel.

In August and December 2004, Tomago sent two shipments of SPL to Italy, representing a total of 14,700 tonnes (equivalent to the volume generated in the last 24 to 30 months). In Italy, the SPL is reprocessed into an additive used in electric arc furnace steel making.

Tomago has adopted this effective SPL recycling process to maintain the quantities stored on site at manageable levels while a sustainable locally based solution is further developed.

Generated spent potlining

in thousands of tonnes



The increase in spent potlining generated in 2004 is largely due to the Pechiney acquisition and an unusually large production of spent potlining (16,000 tonnes) in Vlissingen following a major retrofit. The 2003 figure has been restated due to the availability of more accurate figures. The amount of spent potlining per year fluctuates as it depends on the number of potlinings replaced as part of routine potline maintenance.

Generated spent potlining rate

in kg per tonne of hot metal produced



The increase in the rate of 20.5 in 2003 to 23.2 in 2004 is largely attributable to an unusually large production of spent potlining (16,000 tonnes) in Vlissingen following a major retrofit.

Air Emissions

Alcan's Primary Metal Group also manages a number of air emissions, in particular dust, fluorides, and polycyclic aromatic hydrocarbons (PAHs).

Dust can be an issue when smelter pots are started up and during operation, resulting in the emission of particulate into the atmosphere. Aluminum smelting also generates emissions of fluorides, an environmental material of concern because of its effect on vegetation. At a certain level of concentration, fluoride emissions can cause discolouration of leaves and negatively impact plant growth in areas surrounding aluminum smelters.

A study conducted by international experts on the condition of vegetation around Alcan's smelters in the province of Quebec shows that the Company's actions to reduce atmospheric releases and to closely monitor industrial processes have contributed to notable improvements to the vegetation in the areas around the smelters. For the six smelters, the rate of fluoride emissions per tonne of aluminum produced dropped by 34% between 1997 and 2004.

> Visit www.alcan.com/SR05 for more details

PAHs are emitted during the aluminum smelting process, primarily in Söderberg facilities due to the incomplete combustion of carbon during the electrolytic process. Some PAHs are suspected as possible human or animal carcinogens. While the rates of risk indicated by recent scientific studies make it difficult to demonstrate incidence of emissions-related disease, PAHs remain of concern to the public generally. Alcan has taken a precautionary approach and has invested heavily in reducing its PAH emissions.



Inspection of cargo containers of SPL at the Tomago smelter.



NEW EQUIPMENT AT ALUCHEMIE YIELDS PAH REDUCTIONS

Alcan's Aluchemie facility in the Netherlands has been producing prebake anodes since 1964. In the production of anodes, key environmental releases are polycyclic aromatic hydrocarbons (PAHs) and fluorides. In close collaboration with local environmental authorities, an innovative fume treatment was part of the installation of a seventh anode furnace in November 2003.

Furnace 7 was built to accommodate a planned production capacity increase from 400,000 tonnes to 510,000 tonnes of anodes per year. A fume treatment plant is essential for operating an anode furnace; with Furnace 7, an innovative Regenerative Thermal Oxidation (RTO) unit was installed. In 2004, its first full year of operation, Furnace 7 produced the planned tonnage of anodes while the fume treatment plant performed better than expected in terms of reliability and in emission levels. PAH levels were reduced by approximately 90%.

The raw gas of the other six furnaces is treated by four old fume treatment plants. Due to their age and design, replacement of these fume treatment installations will become necessary. A project is under preparation to replace two of the old fume treatment plants by one new plant, using the fume treatment plant of Furnace 7 as the basis for the design. Advantages of the new fume treatment plant are numerous:

- Lower emissions of PAH and other tar-like components that meet requirements as laid out in the environmental permit.
- No odour complaints. Old fume treatment plants regularly cause odour complaints, but odour produced by the new installation is hardly detectable. Even though total production went up by 25%, the amount of odour complaints actually went down in 2004.
- Easy to operate and reliable.
- Reduced maintenance costs for the new installation. The projected costs for future maintenance activities over time compare very favourably to the old installations.

Aluchemie's new fume treatment plant has been well received by employees, local authorities and the community alike.

Primary Metal dust emissions—smelters only in kilograms



Although the increase in total particulate emissions is attributable to the Pechiney acquisition, Pechiney accounts for only 3,100 tonnes. With the closure of Arvida in 2004 (approximately 1,400 tonnes), the total increase remains below 2,000 tonnes.

Primary Metal dust emissions rate—smelters only in kilograms per tonne of hot metal produced



Primary Metal fluoride emissions in kilograms



Most sites reported improvements in fluoride emissions in 2004. The increase in total fluoride emissions in 2004 is due to the Pechiney acquisition.

Primary Metal fluoride emissions rate in kilograms per tonne of hot metal produced



Alcan closely monitors the air emissions produced by the reduction process and related activities. As seen in the examples and data, air emissions per tonne of primary aluminum output have been significantly reduced through increased use of modern prebake technology (as opposed to the older Söderberg technology), the use of proven gas scrubbing technologies, more efficient gas ventilation systems and more mechanized operations in the pot rooms.

Other Releases

Alcan's Primary Metal Group also makes a concerted effort to reduce the potential for accidental oil and grease leaks. The protection of soil, groundwater and rivers is a major preoccupation when operating hydroelectric equipment and substations. This equipment requires the use of oil and grease for the lubrication of mechanical components or cooling.

For example, at Alcan's Quebec Power Operations in Canada, significant reductions in the accidental spillage of oil and grease have been achieved. This is a result of thorough maintenance of hydroelectric production equipment, improvements made to equipment, and dedicated employee teams. In less than 10 years, losses of oil and grease have been reduced by 80%, from 1,757 litres to 353 litres in 2004.

Primary Metal PAH emissions

(Söderberg smelters only) in tonnes



Data for 2003 and 2004 has been restated to more accurately reflect global emissions. Prior data included North American sites only.

Primary Metal PAH emissions rate

(Söderberg smelters only) in kilograms per tonne of hot metal produced



The decrease in rates can be explained by the fact that all sites showed improvements in PAH emissions from 2003 to 2004.

The closure of Arvida (71,000 tonnes) also contributed significantly to the decrease in PAH emissions.

Engineered Products

Reducing environmental impacts from production line processes within the Engineered Products group is an ongoing objective, especially in the recycling of used aluminum and the minimization of waste.

In the spirit of *EHS FIRST*, there have been many initiatives throughout Engineered Products not only to reduce or recycle waste, but also to sensitize employees with regard to waste disposal and increasing environmental awareness by waste separation schemes beyond the site boundaries.

The Engineered Products group's environmental emissions to air and/or water are relatively modest, but the business group still takes a concerted approach to managing any potential releases. This includes treatment of rolling oils, emulsions used in manufacturing, and wastewater treatment to reduce any environmental impact. As discussed in last year's Sustainability Report, the business group also recycles contaminated caustic soda that is used in the cleaning of dies from the extrusion process.

The Product Stewardship section of this report explains in greater detail the actions of Engineered Products in developing sustainable products throughout the product's life cycle, which includes minimizing environmental releases.



NEW EMULSION TREATMENT STATION

Since August 2003, the AP002 (AP = anti pollution) emulsion treatment station at Issoire, France, has allowed the Alcan Aerospace, Transportation and Industry business unit to treat 20 cubic metres per day of rolling oil and used oils from other shops.

Opened at a cost of approximately US\$1 million, the station complies with current environmental standards, which the former SATIM incinerator that was dismantled in November 2004 could not meet. The treatment involves separating oil from water, followed by a biological process to reduce chemical oxygen demand. The water is tested in the station's laboratory before being discharged into the Allier River. The process thus separates water, reusable oils, and sludge that is sent to treatment facilities.

Running the emulsion treatment centre is a full-time job. In addition to monitoring the station, the operator is responsible for tests and waste disposal.

Packaging VOC emissions

in thousands of tonnes



Packaging VOC emissions rate

in thousands of tonnes per million US\$ packaging sales



The increase in VOC tonnage is attributable to the Pechiney acquisition.

The reduction in VOC emission rates can be explained by:

- (1) The installation of VOC emission reduction systems. Weston installed new oxidisers in 2004;
- (2) Permanent total enclosure (PTE) in Shelbyville resulted in a 50% VOC emission reduction;
- (3) Sélestat replaced its incinerator and extended solvent recovery systems in 2004;
- (4) Through the acquisition of Pechiney, we have increased our sales significantly;
- (5) The many sites acquired from Pechiney are mostly located in countries with strict regulatory policies accounting for comparatively lower emission rates.

Alcan's VOC emissions rose between 2002 and 2003, following the purchase of VAW Packaging (FlexPac), which used exclusively solvent-based processes. Despite the fact that the emission figures for 2004 show the impact of the integration of the Pechiney plants with an increase in overall absolute emissions, there has been a significant improvement in the ratio between Alcan's VOC emissions and overall volumes.

Packaging

In Packaging, a high priority is placed on overseeing the use of chemicals at our plants. Specific tools and processes have been adopted to control these products and eliminate known hazardous substances like ethers and alcohols.

Volatile Organic Compounds

Emissions from solvents used in packaging and printing processes, known as volatile organic compounds (VOCs), can contribute to the production of ground-level ozone. Excess ozone, along with other pollutants, can produce photochemical smog, which can harm animal and plant life. Many of the solvents used in the inks and lacquers found in Packaging plants are listed as VOCs. Reducing these air emissions is important for workplace health and safety (due to their hazardous and flammable nature) and in addressing broader concerns about VOCs as an air pollutant.

MINIMIZING ENVIRONMENTAL FOOTPRINT IN CALIFORNIA

Global Pharmaceutical's Commerce plant (Medical Flexibles) is located in Southern California, a region with significant air quality problems and strict environmental regulations. To ensure compliance with US Environmental Protection Agency (EPA) hazardous waste requirements, the plant needed to decrease its solvent usage and hazardous waste generation. It also sought to reduce its VOC emissions and landfilled waste.

A multifunctional team from the purchasing, quality, engineering, printing and laminating departments tackled the challenge based on Reduce, Reuse, Recycle, Recover. They identified viable aqueous-based alternatives to VOC-producing solvents and indicator inks for printing and laminating.

In addition, the team assessed each non-hazardous waste stream and determined that laminated scrap film could be recycled. A local recycling vendor was identified to purchase the film and employees were trained to collect and properly sort waste material.

As a result of employee diligence and teamwork, the Commerce plant reduced its average monthly VOC emissions by a factor of four, from 290 kg in 2003 to 73 kg in 2004. Annual solvent and hazardous waste costs were decreased by some \$15,000 and \$18,000 respectively. The printing and laminating departments are more environmentally friendly, the plant enhanced its reputation for being environmentally responsible and the additional \$33,000 in savings provided an unexpected financial gain.

Additional Sustainability Examples

www.alcan.com/SR05

Bauxite and Alumina

- Recycling waste at QAL in Australia

Primary Metal

- Eliminating residue through recycling at Pierrefitte in France

In 2004, Packaging Food Americas was able to make substantive reductions in its environmental footprint, without reducing size or profitability. In fact, both sales and profits increased throughout 2004. Yet the business was able to make reductions in emissions, hazardous waste and solid waste while also increasing its recycling revenues. Highlights of the year are:

- Reduction in emissions by 5.9%
- Improved recycling revenue by \$1,141,000
- Reduced cost of hazardous waste by \$164,000
- Reduced cost of solid waste disposal by \$385,000
- Reduced waste to landfill by 1,950,447 kg
- Increased recycling of solid waste by 3,764,817 kg
- Improved recycling of solid waste by 4%

Some of the significant events that contributed to reducing the footprint include: the completion of an emission abatement project in Toronto, Ontario, Canada; the addition of a permanent, total rotogravure printing enclosure in Shelbyville, Kentucky; and the completion of a solvent distillation unit in the Menasha, Wisconsin plant.

Substantial efforts have been devoted to reducing emissions at some 100 Packaging sites that use significant volumes of solvents. The leading emissions that remain to be treated are generated by a small number of plants: about 10% of facilities that use solvents are responsible for close to 70% of Packaging's VOC emissions. The Company is actively seeking solutions at each of these plants.

Waste

Waste elimination at Packaging includes the reduction of hazardous waste and replacing landfill options with solutions involving recycling and incineration combined with energy recovery.

ADDING VALUE THROUGH WASTE TO LANDFILL REDUCTION AT NEENAH

In 2004, the Food Americas flexible plastic packaging plant in Neenah, Wisconsin, U.S., raised the bar on its waste management performance in order to further reduce its solid waste footprint. Despite steady improvements, the plant's monthly landfill costs remained too high and recyclable material was still ending up in landfill sites. With a recycled material rate of 94.6% and recycling revenue of \$900,000 in 2003, Neenah set even more ambitious Key Performance Indicators for 2004 including a 95.1% recycled material rate.

A thorough analysis of landfill-bound material enabled Neenah's recycling team to partner with the Material Handling, Quality Assurance and Film departments to identify additional recycling opportunities. The team also looked at eliminating errors in handling, sorting and labelling waste materials. At the same time, vendor-related inadequacies were addressed. Today, new vendor bids are solicited every six months to accommodate frequent price increases related to commodity values.

Neenah's 240 employees received training on the importance of the recycling program, proper handling of waste material to maximize recycling, as well as their individual roles and responsibilities. The plant monitors the program's progress and records each department's waste on a monthly basis. This ensures compliance and identifies ways to continually improve.

Non-compliance issues are brought to the attention of department managers and area employees by the environmental team. Retraining is provided where necessary and awareness is maintained through shift change huddles. To sustain compliance, waste management training is now routine for new employees and in all annual refresher programs.

Thanks to this concerted effort, the Neenah plant exceeded its 2004 goals by a significant margin, posting a 96.8% recycling rate and \$1.5 million in recycling revenue. This constitutes the highest recycling rate of any Food Americas plant and the sector's highest income from recycling. This important program benefits the environment, the local community as well as the plant's financial performance and culture.



Part of Alcan's challenge as a sustainable business is to respond effectively and in a timely manner to a range of industry shifts at a variety of levels.

Taking action

Innovation and Industry Shifts

Key Challenges and Opportunities:

- Be proactive in monitoring industry shifts (e.g., energy costs, customer needs) that affect internal operations with a focus on developing innovative technological solutions to address challenges presented.
- Monitor external environment to respond to societal shifts in attitudes or consumer behaviour and work with customers to develop innovative product solutions to capitalize on market opportunities.

Innovation and Industry Shifts as a key area of focus

7	Short or long term	Business groups most affected	Stakeholders most affected/involved
	Both	Primary Metal, Engineered Products, Packaging	Investors, Suppliers, Customers

All four of Alcan's business groups operate in commercial markets that are constantly evolving. This evolution creates a range of industry challenges requiring proactive and innovative responses by Alcan to ensure it maintains sustainable long-term global competitiveness. It is a complex challenge that ranges from making the most sustainable investment choices, to driving innovation and technological development that best meets shifting company, customer, and societal needs. It is through Alcan's response that opportunities are being created to enhance Alcan's position as a sustainable and globally competitive company. These opportunities include those related to technological development, internal process improvements, cost competitiveness, and the ability to provide innovative product solutions that not only respond to markets, but drive market development in a competitive and sustainable fashion.

Energy

As discussed in the Energy section of this report, the volatility of energy markets is a key challenge to Alcan as a major aluminum producer and user of energy. Energy prices have always been key to the primary aluminum industry. A consensus is building that we are in for a major shift in the dynamics of energy markets. Oil and other energy prices have actually stayed low in real terms since the OPEC crisis of the 1970s. But a new era of oil shocks is clearly upon us and the flow-through impact on electricity prices cannot be far behind. In fact, it is already being felt in Western Europe and North America as old power contracts expire. With no long-term contracts available at a viable price, the future of smelting in Europe is seriously jeopardized. As Europe has a favourable mix of energy sources, this situation is attributable to the artificial price inflation resulting from the incomplete deregulation of EU energy markets. The European industry is actively engaged in a search for solutions with the regulatory authorities and power producers.

The key to Alcan's long-term success as a sustainable company is to ensure that selected investment locations contribute to long-term sustainability. Due to the long-term nature of Alcan's investments (the average lifespan of an aluminum smelter being several decades), remaining competitive in the long term requires secure supplies of energy. This is particularly relevant for those energy sources that improve the energy mix in terms of having lower GHG emissions, thereby also contributing to the environmental dimension of business group operations.

As discussed earlier in this report, a step in this direction is the "Gas to Gove" project in the Northern Territory of Australia that will provide Alcan with an economic and long-term energy source for its Australian bauxite and alumina operation. The switch from fuel oil results in improved air quality and significantly reduced greenhouse gas emissions. Alcan recognizes the greenhouse gas benefits of natural gas and is pursuing other long-term agreements with similar economic and environmental benefits.

Technology

Responding to energy markets and opportunities presented by economically competitive investment environments are only two components of Alcan's approach to industry shifts. The global aluminum industry is highly competitive and producers worldwide, including Alcan, are constantly seeking ways to reduce operational costs to boost competitiveness. In real terms, the industry has witnessed a continued long-term decline in the price of aluminum over more than 30 years. Traditional "learning curve" effects and concerted cost reduction have kept our industry competitive during this period. The industry has managed to survive the last three decades of declining real prices for aluminum through investment in new technology and cost control.

PROPOSED SMELTER MEETS LONG-TERM ENERGY NEEDS

The importance of sustainable energy access was a key component of a Shareholders' Agreement that Alcan signed in February 2005 with the Oman Oil Company (OOC) and Abu Dhabi Water and Electricity Authority (ADWEA). Called the Sohar Aluminium Company Shareholder Agreement, this agreement is for the development of a proposed 325 kilotonne per annum aluminum smelter project in Sohar, Oman that includes an 800 MW gas-fired power station.

In June 2004, Alcan announced that it is committed to a 20% stake in the joint venture. The project will utilize the most advanced version of Alcan's highly efficient Pechiney AP35 technology. As such, it provides an excellent opportunity for Alcan to enhance its position as the leading low-cost aluminum producer and create further value for shareholders, while developing and expanding the scope of aluminum production in this growing and dynamic region of the world. Alcan also has the option of acquiring up to 60% of a planned second potline for an additional 330 kilotonnes per annum of aluminum.

Key to the project's sustainability is guaranteed long-term access to a dedicated power supply on competitive terms and in a quantity sufficient to meet the energy requirements of phases I and II of the smelter project. Subject to successful completion of the project agreements and financing arrangements, construction is expected to commence in the second half of 2005 and result in first metal production by the end of 2007.

This ongoing evolution has provided a key competitive opportunity for Alcan in terms of technology development to respond to such industry needs. The acquisition of Pechiney in December 2003 resulted in the combination of Pechiney's aluminum smelting technology with Alcan's low cost smelter operating know-how and management excellence. This put Alcan Inc. at the cutting edge of aluminum smelter technology solutions and positioned the Company as the supplier of choice to the industry with state-of-the-art smelting technology products. In addition to the licensing of technology, Alcan also provides smelting services, equipment sales and engineering, and support services. In fact, Alcan's technological and engineering solutions account for more than 80% of smelting capacity installed since 1990 in the western world.



Bumper systems made from aluminum extrusions by Alcan reduce the weight of automobiles and contribute to increased passenger safety.

For example, the Primary Metal Group has reaffirmed its commitment to maintain technological leadership in research and development with two research laboratories – the Arvida Research and Development Centre (ARDC) in Quebec, and the Laboratoire de recherche de fabrication (LRF) in France. Some 200 people work at ARDC and 110 are employed at LRF. The goals of the research teams are to work in close collaboration and synergy to:

- Support value maximization through rapid improvement of current assets;
- Consolidate and develop the group's smelting technology;
- Provide scientific leadership leading to step change and create powerful competitive advantage in the longer term.

While technology is a critical element in any discussion of the industry's future, Alcan also recognizes that the industry appears to be reaching limits to cost reductions available through incremental advances in core technology. These advances can and will still be made, especially with the use of state-of-the-art technologies. But, realistically, it is unlikely that a major step forward in technology-driven efficiency will occur without an equally major breakthrough in the traditional Hall-Héroult aluminum smelting process that has been in existence for some 100 years.

The A380, with a capacity of 555 passengers, uses 10 times more aluminum than conventional single-aisle planes and three times the amount used in current wide-body aircraft.

A weight reduction of 10% per aircraft was achieved by combining innovative alloys. Alcan estimates that this weight reduction will save 90,000 tonnes of aviation fuel during the lifetime of one aircraft, representing a reduction of 300,000 tonnes of greenhouse gas emissions.

Market Demands

Other areas of Alcan's business are also in the midst of managing and responding to the many competitive challenges brought about by global competition and quickly evolving global markets for a range of Alcan's products.

ENGINEERED PRODUCTS

Alcan's Engineered Products business group is also in a position to respond to evolving societal demands through its wide range of products. As discussed in the section on Product Stewardship, a large part of this ability to anticipate changes is supported by using a life cycle perspective to better understand the full life cycle impacts of its products. Key innovations in the Engineered Products group demonstrate Alcan's ability, in cooperation with customers and other stakeholders, to contribute to broader societal environmental goals. Product Stewardship is increasingly representing a substantial business opportunity for Alcan's Engineered Products group.



One area in particular where the Engineered Products business group is working with its customers to respond to societal challenges is the transportation of people and goods. Demands for improved environmental performance on the transportation front are significant, particularly with the global challenge of climate change.

This is also well illustrated in Alcan's long-standing efforts in developing new alloys and fabrication processes for aerospace applications. These initiatives, which capitalize on the life cycle benefits of aluminum, have led to significant innovative weight-saving solutions demonstrated in the new Airbus A380 airliner (see 2004 Sustainability Report for more details). Alcan continues to strengthen these efforts in the firm belief that material science, relating both to aluminum alloys and composites, still contains vast potential for further progress in the sustainable development of its businesses.

Alcan Mass Transportation Systems is also creating a market through a combination of technical expertise, product, and the Company's position on sustainability. In partnership with the US Business Council for Sustainable Development, Alcan is currently working with New York City Transit, Oak Ridge National Lab, and the New York State Energy Research and Development Authority on expanding light-weighting technology for rail freight.

Alcan is helping customers meet increasingly sophisticated and technical demands and to drive these demands in the creation of new markets that meet sustainability objectives by applying its product stewardship and life cycle concepts.



Articulated low-floor tramway named Cobra built by Bombardier Transportation (Switzerland) Ltd for Zurich Transit Authorities using structural aluminum components, sandwich panels and composite driver cabs from Alcan.

LIGHTER AND MORE SUSTAINABLE RAILWAY CARS

Rail transport is recognized as the most sustainable means to move people and goods. Alcan's contribution to this development was to make such trains lighter by replacing steel with aluminum. Today, approximately 80% of passenger rail cars are built of aluminum – even the cars of Shanghai's advanced Maglev (magnetically elevated) Transrapid train were designed by Alcan.

An independent study has shown that each kilogram of weight savings of a train means an average savings of greenhouse gas emissions of about 80 kg for short distance trains and about 48 kg for long distance trains, calculated over the trains' useful life of 30 years or more. This is in addition to other environmental savings such as energy resources.

Compared with the steel alternatives, a long distance train car is typically four tonnes lighter when built of aluminum, which means that it saves 192 tonnes of greenhouse gas during its useful life. A short distance aluminum train car is two tonnes lighter than the steel alternative and saves 160 tonnes of greenhouse gas during its useful life.

The replacement of steel by aluminum is based on an innovative engineering concept that has been developed by Alcan over the last 30 years in Switzerland. The system uses welded constructions based on up to 70 cm wide large aluminum profiles that are extruded in Alcan's German and Swiss plants. It is mainly this engineering concept that has driven the use of aluminum in railway car bodies.

Aluminum contributes to energy saving not only in the moving parts of the railway system. In the past few years, an innovative bus-bar system for subway trains has been developed by Alcan using an extruded aluminum-steel composite structure. Aluminum's excellent electrical conductivity means the new system could significantly reduce energy losses and contribute to the improved energy efficiency of subway systems.

ALUMINUM INJECTION MOULDS SPEED UP TIME-TO-MARKET

A recent research program clearly indicates the advantages of using aluminum in place of steel for injection mould manufacturing. Metal moulds are used for fabricating items such as plastic bottles through an injection process. The study was carried out by Alcan Distribuzione (Alcan Service Centres business unit) in collaboration with the Department of Material Science Engineering of the University of Modena (Italy). The research examined the influence of heat conductivity on the shortening of the cycle time and the quality of the finished injected-moulded product.

The processing of plastic in order to obtain a high quality finished product is a sophisticated operation that requires a careful and thorough technical analysis right from the initial planning stages, particularly in injection moulding. In this industrial process, the mould design must ensure the functional characteristics of the end product and comply with the aesthetic requirements of the end users. Planning and execution times must be controlled, the mould must work in the proper way, cycle times have to be reduced to the minimum, and the tool life must cover the planned production series.

Time-to-market is improved due to the economics of high-speed machining processes, which result in much shorter production times for moulds made of aluminum alloys than those made of steel. The same applies to the greater design flexibility and the better heat conductivity of aluminum, which is roughly five times higher than that of steel.

After carrying out simulations on 12 parts, varying in shape and size and using different plastic materials, the research team was able to conclude that over the whole cycle time a minimum saving of 20% to 35% can be achieved when using aluminum instead of steel moulds.

Additional Sustainability Examples

www.alcan.com/SR05

Primary Metal

- Alcan technology aimed at evolving industry needs

Engineered Products

- Burg extrusion plant in Germany reaches new automotive markets

Packaging

- Cooperative efforts result in unique flexible package
- Reducing costly waste with improved meat packaging



The AP Singen Pharma-Centre (operating in accordance with the ISO 14644-1 regulation, class ISO 8, FED 100.000) carries out reel slitting and pre-packing of flexible primary packing materials for pharmaceutical applications under clean room conditions.

SINGEN INVESTMENT RESPONDS TO CUSTOMER NEEDS

Packaging currently holds a leading position in flexible pharmaceutical packaging. Having a dedicated clean room is an important benefit to the industry, where standards for cleanliness and hygiene are exacting and regulations are stringent. Dedicated facilities ensure that there is no exposure to contaminants from the manufacture of non-pharma products.


A \$19.3 million investment at Alcan's Singen complex in Germany responds to these industry requirements with a state-of-the-art pharma clean production centre, a modern lacquering and laminating machine and a curing room. The new lacquering and converting machine has increased capacity by approximately 10% to 15%, improved productivity and increased on-time delivery by 7%.

The new machine operates more efficiently, requiring fewer raw materials and lacquers and less energy, while also providing the plant with an increased capacity to produce aluminum-based packaging materials. This has enabled Packaging to develop products that were not previously commercially viable, thereby creating the opportunity to compete in new markets, including those emerging in China and South America.

PACKAGING

Packaging operates in a global industry that is in constant change as customers adapt to the rapid pace of evolving consumer preferences. In addition to evolving demands for greater functionality, convenience and portability in a range of packaging products, society is also increasingly demanding more secure, tamper-proof and resilient packaging. The Packaging group must constantly adapt and innovate to serve its customers' responses to these types of evolving consumer needs, while responding to ecological and safety concerns and advising customers about ways to improve product performance. This aspect of packaging operations is both important and highly complex, given the broad variety of products and markets.

One of Packaging's innovations is N'CRYPT® technology. In 2004, Packaging was the recognized technology leader in the global market for this important solution to the increasing problem of counterfeit pharmaceuticals. Through fine line print features, special inks, encrypted codes and holograms, Alcan's customers continue to apply both overt and covert solutions in a multi-layered, brand-enhancing manner. This Alcan innovation continues to help protect consumers, significantly hinders a counterfeiter's efforts to sell unapproved medications, and is providing a strategic market opportunity for Alcan worldwide.



Product Stewardship is a product-centered approach to sustainability – a management concept that Alcan employs to consider the complete supply chain and downstream activities related to the life cycle of its products.

Taking action

Product Stewardship

Key Challenges and Opportunities:

- Reduce the impact of Alcan products and promote the inherent benefits throughout the products' life cycles.
- Implement Life Cycle Thinking in product design and development.
- Communicate the value of life cycle thinking and possible achievements to internal and external stakeholders.

Product Stewardship as a key area of focus

8	Short or long term	Business groups most affected	Stakeholders most affected/involved
	Emerging issue	Engineered Products, Packaging	Suppliers, Customers

Sustainability involves much more than just the environmental compatibility of a product. Instead, a broad range of sustainability aspects must be taken into account over the entire life cycle of the product, such as social impacts and long-term impacts on resource availability, climate change and consumer behaviour, which can be triggered indirectly by the use of the product.

What is Life Cycle Thinking?

When these factors become part of a company’s *raison d’être*, as they are at Alcan, it becomes critical to examine the life cycle impacts while the product is still being defined, designed and developed, rather than during the manufacturing or recycling processes.

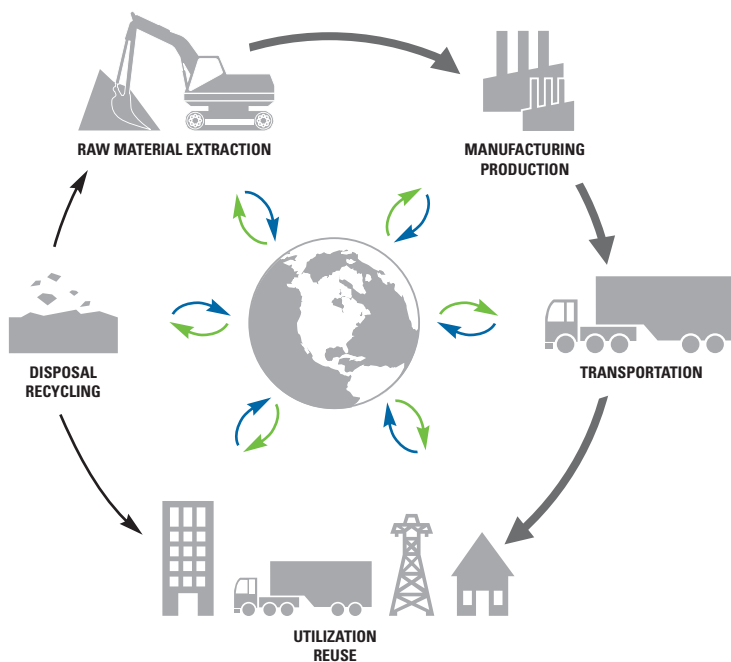
A life cycle of a product starts with raw material extraction, continues with the fabrication of the relevant semi-finished products, includes finishing and assembling of the final product as well as its use and maintenance, and concludes with the end-of-life operations. This last stage includes recycling of materials and, after adequate treatment, final disposal of waste.

For recyclable products such as aluminum products, a life cycle can be modeled “cradle-to-cradle” by a product system where the recycled material can substitute primary material. Only the material that is lost at the different stages of the life cycle needs to be replaced by primary material as illustrated in the figure opposite.

Life Cycle Thinking is an approach to address and analyze all these activities in regard to risks, opportunities, and value creation in order to find the best overall solutions. It involves internal decision-makers from R&D, production, marketing, or management, as well as external stakeholders such as suppliers, retailers,

customers, consumers, and the general public. Life Cycle Thinking should enable Alcan to concentrate on sustainability actions that can bring the greatest overall benefits from its products, for its long-term profitability, the natural environment, and global society in general.

LIFE CYCLE THINKING



At each stage of the product or service life cycle, there is resource consumption (as indicated by the green arrows) and production impacts (as indicated by the blue arrows).



Aluminum Forest made with Alucobond Silvermetallic in Houten, the Netherlands, an outstanding architectural masterpiece.

What does Product Stewardship mean for Alcan?

As an advocate of Product Stewardship, Alcan recognizes that it must take on new challenges in regard to managing the risks and benefits of products. Without this producer commitment, it is difficult to make significant progress toward improved resource conservation and a more sustainable economy.

At Alcan, Product Stewardship has been identified as one of eight key areas of focus that are important for the Company's long-term sustainability and, by extension, profitability. Life Cycle Thinking is now necessary to broaden relationships and further engage suppliers, customers and other stakeholders. From the development of special alloys to the innovative customer solutions developed in the Engineered Products and Packaging groups, the Company is committed to furthering this approach.

Since the evolution of the life cycle concept, Alcan has been actively engaged in the development of standard practices and methodologies for environmental life cycle assessments and has partnered in this effort with associations such as the International Organization for Standardization (ISO), the European Aluminium Association, the International Aluminium Institute, the United Nations Environment Programme (UNEP), and the Society of Environmental Toxicology and Chemistry (SETAC).

In most cases, manufacturers, in cooperation with their customers, have the greatest ability, and therefore the greatest responsibility, to reduce the environmental impacts of their products and promote the life cycle benefits inherent in those products. Alcan accepts this challenge and recognizes that Product Stewardship also represents a substantial business opportunity.

Product Stewardship is a business approach that moves environmental and other sustainability actions from issues of compliance to those of long-term stability and competitive advantage.

INNOVATIVE ENVIRONMENTAL PROGRAM AWARD

The annual Innovative Environmental Program Award is awarded to a company committed to protecting the environment and contributing to solutions that promote the recycling of plastics in the waste stream.

In recognition of its outstanding corporate recycling practices, Alcan Composites USA Inc. received the 2004 Innovative Environmental Program Award from the International Association of Plastics Distributors (IAPD).

IAPD officials recognized the excellent job Alcan Composites has done at integrating *EHS FIRST* into its daily business. Recycling programs incorporating plastics, aluminum, wood pallets, oils and solvents at the Company's Benton, Kentucky facility were highlighted. Employees also recycle aluminum consumer products and donate the proceeds to Habitat for Humanity.

LIFE CYCLE THINKING DRIVES GHG SAVINGS

Some 30 years ago, aluminum was rarely used in vehicles. During the last few years, the aluminum industry has invested significant efforts in R&D activities in order to replace specific components of steel by aluminum. Aluminum has also replaced copper in heat exchangers. Independent studies have shown that weight savings result in significant energy savings during the lifetime of the products.

Typical GHG savings per kilogram weight reduction (depending on individual vehicle type and use pattern, some differences with the figures reported below may be found):

- Automobiles: 22 kg CO₂e
- Ships: 100 kg CO₂e
- Short distance trucks and urban buses: 55 kg CO₂e
- Long distance trucks and buses: 20 kg CO₂e
- Short distance trains, subways and trams: 80 kg CO₂e
- Long distance trains: 48 kg CO₂e

Comparative studies have shown that 1 kg of aluminum usually replaces up to 1.9 kg of steel or copper for automotive, bus, truck and ship applications and about 1.5 kg in rail applications.

In 2004, Alcan (without Novelis) shipped about 250,000 tonnes of aluminum for vehicle applications, which is estimated to reduce greenhouse gas emissions by more than six million tonnes during the life cycle of the vehicles.

The contribution of the automotive and truck sectors to the total savings is almost equal. The figures do not include the aluminum ingots shipped to cast-houses that supply castings for transport application, nor the shipments of ingots to independent extruders and rollers for fabrication into vehicle components. The transport of the aluminum products to the customer need no special consideration in this case, as the relevant transport distances are much smaller than the life time running distance of a vehicle.

Alcan's efforts to save energy and greenhouse gas emissions by light-weighting are not limited to the substitution of heavier metals. The weight of aluminum structures can also be further reduced through innovations such as new alloys, improved shapes of components, multi-material parts and advanced joining processes.

Operationalizing Product Stewardship

The benefits of Product Stewardship can only materialize if pragmatic approaches that are readily available and usable exist. Examining the points of influence and relevance of business processes from a life cycle perspective helps to ensure that decisions and actions are consistent with Alcan's sustainability-driven concept of value. This means leveraging the *EHS FIRST* mindset and the CI toolbox to achieve internal benefits such as cost savings, higher employee satisfaction, better internal EHS performance, improved quality, and improved overall performance.

A Product Stewardship toolbox is also under development, in order to be able to introduce the concept into existing decision-making processes concerning products. It is important to note that Product Stewardship is not "another program" – product stewardship is a "way of doing things" and an essential component to support the Company's sustainability-driven concept of value. There is no "one-size-fits-all" solution, but the concept is similar independent of the application.

Product Stewardship is an important long-term goal, one in which this concept becomes an integral part of decision-making for any product system. For example, at Alcan Engineered Products, Life Cycle Thinking starts with a seminar on environmentally sound design as part of the systematic training received by engineers.

> Visit www.alcan.com/SR05 for more details

Based on standardized methodologies to perform environmental life cycle assessments, Alcan is developing pragmatic approaches that meet the requirements of international standards such as the ISO 14040 series of standards on the methodology of life cycle assessments, while also meeting the needs of the practitioner.

Product Stewardship in Development and in Innovation

Technology is a key part of the solution for sustainable development. Innovation and technology are tools for achieving higher resource efficiency and a reduced environmental impact. A major portion of Alcan's total research and development expenditures is directed toward enhancing the sustainability of our production processes and developing sustainable products.

In addition, special efforts are made toward step changes within the Engineered Products Future Options Program.

Future Options is designed to collect and assess ideas for new technologies that will enhance Alcan's products and processes. Ideas can come from anywhere (R&D, plants, external sources such as universities, etc.). The program is directly funded by the Engineered Products group, is independent of the R&D labs and reports to the Technology and Innovation Review Board.

New and innovative ideas for radically different processes and products are collected and evaluated for feasibility and business impact. Part of the Future Options process is a disciplined approach to consider the environmental impact and to assess the potential product's full life cycle. Any new development must carefully weigh all the aspects of product stewardship from design, manufacturing and use, to the ultimate recycling and disposal.

The ideas proposed do not necessarily need to be applicable to the existing businesses of Engineered Products. Therefore, the focus of the Future Options program

is more about a gradual change in markets, products and processes than it is about continuous improvement. As a part of this approach, Alcan also actively engages external resources, such as suppliers or universities, to work together to develop new technologies and materials. These emerging technologies and materials are often combined into demonstrator projects. This is discussed in detail in the Industry Shifts section of this report.

Product Stewardship is a very useful tool for demonstrating the benefits of superior products. Advantages for the customer due to better performance during product use (e.g., lightweighting vehicle components or improved electrical conductivity) or improved recyclability (e.g., food and beverage packaging) can be identified and highlighted sales and marketing activities.

Improved sustainability performance can then be translated into benefits for the customer, giving our product a competitive edge. Product Stewardship enables quantification and/or the relative positioning of improvements from a marketing and communications point of view.

SUSTAINABLE ENERGY GENERATION IN MODERN BUILDINGS

A Future Options project for Engineered Products showcases a photovoltaic module building application, where building facades are used for solar-based electricity production.

The use of these special building and facade surfaces extends the application beyond simply protecting the building from weather impacts and providing aesthetics to also being used to generate electricity by transforming sunlight (photovoltaic). Assuming that the technological challenges of manufacturing competitive photovoltaic facade components can be solved, such modules could enable a widespread integration of sustainable energy generation into modern buildings. Such building components – on the basis of Alcan's composite products – would lead to greenhouse gas savings of about 300 to 1,000 kg (and more) CO₂ per square meter of facade (depending on geographic region and specific lifetime of the application).

These savings, combined with the enormous potential facade area that is available for such products, would yield an impressive contribution to the reduction of greenhouse gases and other environmental impacts, without using additional resources for solar energy parks or other installations.

Additional Sustainability Examples

www.alcan.com/SR05

Engineered Products

- Internet education on the use of aluminum cable for downstream users
- Alcan lead-free alloy meets new standards

Packaging R&D is exploring new opportunities for more sustainable packaging solutions, and also looking at biodegradable plastics and plastics from renewable resources (e.g., starch, maize). These new materials are not only evaluated from a technical point of view, but also in regard to their impacts on the environment, taking into account the complete life cycle, including agriculture in the case of materials based on renewables. It is important to identify those packaging materials that bring environmental or sustainability related advantages – simply being biobased or biodegradable is not sufficient. With a strong approach to product stewardship, Alcan works closely with customers to find the best packaging solutions, while also looking for approaches and tools that facilitate the analysis of existing product portfolios and integrating sustainability into new product design.

Some current tools being explored were developed with help from students enrolled in the École Centrale de Paris. Tests are currently under way at our research centres and facilities at Neuhausen (Switzerland), Sainte-Ménéhould and Sélestat (France), and Milwaukee (U.S.). Once successful introduction of such a tool takes place, it will create an ability to calculate a "sustainability ranking" when assessing any packaging product, particularly during its design phase.

Product Stewardship and Recycling

Alcan is often questioned about the recycled content of its products. The recycled content is often used in "green" questionnaires aiming to assess the environmental impacts of materials used, where materials with a high recycled content are preferred.

This concept was introduced to promote resource conservation and is a valid concept for materials which are difficult to recycle, such as plastics and bricks, or which would otherwise be disposed by incineration or landfilling. Although aluminum recycling is well advanced, especially in closed-loop aluminum beverage can recycling worldwide, a much better indicator for environmental performance of metals is the recycling and recovery rate at the end of the life of the product, as metals that are not collected cause a waste of resources and associated impacts.

Note: The value of aluminum's recyclability is well documented in earlier Alcan Sustainability Reports.

Alcan is currently working on recycling issues with other global aluminum companies as well as other metal producers (steel, iron, copper, etc.) within the International Council on Mining & Metals. Their efforts are aimed at providing common principles and a methodology with respect to assessing the sustainability of recycling strategies. This will be used to demonstrate that the life cycle aspects of recycling and the recovery rate of the product at the end of life are extremely valid indicators for reducing environmental impacts.

As a part of life cycle thinking, Alcan supports:

- Design for recycling, i. e., facilitating dismantling of aluminum from end-of-life products;
- Campaigns aimed at increasing collection rates, e. g., of used beverage cans;
- Cooperation with operations involved in scrap recovery, refining and re-melting to make sure that recycled aluminum has the same value as primary metal.

In the context of increased global demand for aluminum and considering that the average life span of aluminum building products is 30 to 100 years, and transportation products, 10 to 50 years, there is only a limited supply of used aluminum products. To ensure the best recycling opportunities, Alcan strives to use post-consumer aluminum where it is most cost and environmentally effective, such as in certain specific casting alloys. To see volumes of aluminum in various uses globally according to the most recent estimates of aluminum flows by the European Aluminium Association:

> Visit www.alcan.com/SR05 for more details



PERFORMANCE DATA SUMMARY

Additional data on www.alcan.com/SR05

	2004	2003	2002
Average number of employees (in thousands - unaudited)	82	47	48
Capital expenditures and business acquisitions (in millions of US\$)	1,755	4,657	1,073
Payroll/Benefits (excluding Pechiney) (in millions of US\$)	3,314	2,882	2,575
Operating working capital (in millions of US\$)	2,733	2,440	1,445
Capital assets and goodwill (net) (in millions of US\$)	20,019	20,004	12,023
Total assets as at December 31 (in billions of US\$)	33.3	31.9	17.8
Total debt (in millions of US\$)	9,405	9,543	3,751
Preference shares (in millions of US\$)	160	160	160
Common shareholders' equity (in millions of US\$)	10,566	10,117	8,132
Capital employed (in billions of US\$)	21	21	13
Return on capital employed (in %)	5	4	6
Research and development expenses (in millions of US\$)	239	190	115
Environmental protection Financial requirements (in millions of US\$)	254	263	207
Cumulative total return Based upon an initial investment of \$100 on December 31, 1999 with dividends reinvested (in US\$)	130	123	75
Total energy consumption (in millions of GJ)	415	293.9	295.1
Total energy consumption rate (in GJ/US\$ sales)	0.017	0.021	0.024
Alcan historical energy consumption (Alcan smelters) (in kW-h/kg aluminum)	14.9	15.2	15.1
Absolute greenhouse gas emission (in millions of tonnes of CO ₂ equivalent)	41.2	21.8	21.2
Tonnes of CO ₂ equivalent (per thousand US\$ sales)	1.66	1.57	1.70
Total direct GHG emissions (in millions of tonnes of CO ₂ equivalent)	23.7	15.1	15.0
Total direct GHG emissions (per thousand US\$ sales)	0.95	1.09	1.20
Total indirect GHG emissions (in millions of tonnes of CO ₂ equivalent)	15.9	5.3	5.2
Total indirect GHG emissions (per thousand US\$ sales)	0.64	0.38	0.42
PFC emissions (in tonnes of CO ₂ equivalent per tonne of hot metal produced)	1.8	1.1	1.1
GHG emissions from aluminum production (in tonnes of CO ₂ equivalent per tonne of hot metal produced)	6.8	4.6	4.4
Total water use (in millions of m ³)	254.8	177.8	163.56
Total water use rate (in millions of m ³ of water per million of US\$ sales)	0.0102	0.0128	0.0131
ISO 14001 certification (sites registered in %)	60	60	49
OHSAS 18001 certification (sites registered in %)	53	44	8
Recordable case rate (per 200,000 hours worked)	1.79	2.83	3.95
Lost time injury/illness rate (per 200,000 hours worked)	0.68	0.88	1.32
Days lost rate (per 200,000 hours worked)	50.42	55.87	48.78
Number of fatalities	4	2	2
Number of fatalities rate (per million hours worked)	0.021	0.021	0.020
Environmental events rate (minor events per million of hours worked)	1.76	2.24	2.62
Total hazardous waste rate (in tonnes of hazardous waste per million US\$ sales)	3.89	4.40	66.57
Bauxite residue rate (in tonnes of bauxite residue per tonne of alumina hydrate produced)	0.89	1.01	0.84
Generated spent potlining rate (in kg per tonne of hot metal produced)	23.2	20.5	21.5
Primary Metal dust emissions rate – smelters only (in kilograms per tonne of hot metal produced)	3.74	3.73	3.53
Primary Metal fluoride emissions rate (in kilograms per tonne of hot metal produced)	1.52	1.64	1.57
Primary Metal PAH emissions rate (Söderberg smelters only) (in kilograms per tonne of hot metal produced)	1.01	1.07	1.09
Packaging VOC emissions rate (in thousands of tonnes per million US\$ packaging sales)	6.19	9.11	5.29
Canadian donations and sponsorships (in millions of CAN\$)	9.4	5.0	4.9
Donations and sponsorships worldwide (in millions of CAN\$)	13.1	8.5	6.3

ALCAN'S ACTIONS RELATIVE TO THE 10 PRINCIPLES OF THE UN GLOBAL COMPACT

Through a number of key corporate values, policies, programs and practices, Alcan has a strong foundation in place that supports the operationalization across the Company of the 10 Global Compact principles. The following table links those individual principles with specific examples of Alcan's actions:

Global Compact Principles	Alcan Actions
Human Rights	<ul style="list-style-type: none"> Alcan's Worldwide Code of Employee and Business Conduct (Code of Conduct) (training/e-learning, reporting mechanisms, disciplinary actions, Ombudsman and audit functions)
Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights	<ul style="list-style-type: none"> Extensive stakeholder engagement regarding new projects
Principle 2: Make sure that they are not complicit in human rights abuses	<ul style="list-style-type: none"> Formal agreements with Aboriginal groups
Labour Standards	<ul style="list-style-type: none"> Alcan's Code of Conduct (training/e-learning, reporting mechanisms, disciplinary actions, Ombudsman and audit functions)
Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining	<ul style="list-style-type: none"> Alcan's Code of Conduct – requirements to respect such rights
Principle 4: The elimination of all forms of forced and compulsory labour	<ul style="list-style-type: none"> Alcan's Code of Conduct – unequivocal opposition to such practices
Principle 5: The effective abolition of child labour	<ul style="list-style-type: none"> Alcan's Code of Conduct – unequivocal opposition to such practices
Principle 6: The elimination of discrimination in respect of employment and occupation	<ul style="list-style-type: none"> Alcan's Code of Conduct – prohibition against discrimination Anonymous and voluntary HIV testing and antiretroviral therapy for employees Prohibition of discrimination against HIV/AIDS infected employees in the workplace
Environment	
Principle 7: Businesses should support a precautionary approach to environmental challenges	<ul style="list-style-type: none"> EHS Policy <i>EHS FIRST</i> Requirements for ISO 14001 certification Alcan's precautionary approach to climate change, and PAH emissions reduction Participation in World Economic Forum Water Initiative
Principle 8: Undertake initiatives to promote greater environmental responsibility	<ul style="list-style-type: none"> <i>EHS FIRST</i> – specific directives on: greenhouse gases, resource management, soil and ground water management, environmental releases management, waste management and spills containment measures Stakeholder engagement and joint environmental projects Research on environmental issues Road to Biodiversity Project Alcan Prize for Sustainability +30 Network initiative Strong product stewardship efforts
Principle 9: Encourage the development and diffusion of environmentally friendly technologies	<ul style="list-style-type: none"> Alcan Mass Transportation Systems project Water treatment systems in India and Bangladesh Structural core material applications
Anti-corruption	
Principle 10: Businesses should work against all forms of corruption, including extortion and bribery	<ul style="list-style-type: none"> Alcan's Code of Conduct (training/e-learning, reporting mechanisms, disciplinary actions, Ombudsman and audit functions) Alcan's Code of Conduct – prohibition against corrupt business practices Signatory to and working partner in Partnering Against Corruption Initiative (PACI)

GLOBAL REPORTING INITIATIVE (GRI) INDEX

The following table illustrates the extent to which Alcan reports information according to the core performance indicators of the GRI index. The status of Alcan's reporting indicated includes reporting in this report, as well as other information made available publicly through Alcan's website. For a full description of Alcan's reporting in accordance with the full GRI Index of core indicators, please visit: www.alcan.com/SR05.

Reporting Status: F = Full
P = Partial
N = Not Reported

GRI Indicator	Description	Status	GRI Indicator	Description	Status
EC1	Net sales	F	LA1	Breakdown of workforce (by country and type)	P
EC2	Geographic breakdown of markets	N	LA2	Net employment creation and average turnover	N
EC3	Costs of all goods, materials, and services	N	LA3	Percentage of unionized employees	N
EC4	Percentage of contracts that were paid	N	LA4	Consultations/negotiation re. restructuring	P
EC5	Total payroll and benefits	P	LA5	Occupational accidents and diseases	P
EC6	Distributions to providers of capital	P	LA6	Description of health and safety committees	P
EC7	Increase/decrease in retained earnings	F	LA7	Injuries, lost days, absenteeism & fatalities	F
EC8	Total sum of taxes of all types paid (by country)	P	LA8	HIV/AIDS policies or programs	P
EC9	Subsidies received (by country)	N	LA9	Average hours of training per year per employee	N
EC10	Donations to community, civil society, etc.	P	LA10	Equal opportunity policies or programs	P
EN1	Total materials use other than water, by type	P	LA11	Composition of senior management/Board	P
EN2	Percentage of materials used that are wastes	N	HR1	Human rights policies, guidelines, structure	P
EN3	Direct energy (by primary source)	P	HR2	Consideration of human rights impacts	P
EN4	Indirect energy use from purchases	P	HR3	Human rights performance (suppliers)	P
EN5	Total water use	F	HR4	Anti-discrimination policy/procedures/programs	P
EN6	Lands located in biodiversity-rich habitats	N	HR5	Freedom of association policy and application	P
EN7	Description of major impacts on biodiversity	F	HR6	Policy excluding child labour	P
EN8	Greenhouse gas emissions	P	HR7	Policy to prevent forced and compulsory labour	P
EN9	Use/emissions of ozone-depleting substances	P	SO1	Policies to manage impacts on communities	P
EN10	NOx, SOx and other significant air emissions	P	SO2	Policy/procedures addressing bribery and corruption	P
EN11	Total amount of waste by type and destination	P	SO3	Policy/procedures-political lobbying/contributions	P
EN12	Significant discharges to water by type	N	PR1	Policy for preserving customer health and safety	P
EN13	Significant spills of chemical, oils and fuels	N	PR2	Policy/procedures-product info. and labelling	N
EN14	Significant environmental impacts	P	PR3	Policy/procedures-consumer privacy	N
EN15	Reclaimable portion of products sold	P			
EN16	Environmental non-compliance	N			

GLOSSARY

AIMS

Alcan Integrated Management System.

Bauxite residue

A slightly alkaline residual slurry resulting from the extraction of alumina in the Bayer process. The residue contains mostly iron and silicon compounds left over from the bauxite.

CI

Continuous Improvement.

CLEAN

An internally audited initiative in our Packaging group to ensure that high operating standards are maintained in all facilities.

CO₂ equivalent (CO₂e)

The integration of all greenhouse gases based on their global warming potential relative to carbon dioxide emissions.

ECL

Electrification Charpente Levage is an Alcan subsidiary with worldwide sales and services in smelting engineering, construction and equipment installation.

Effluent

Generally applies to liquid waste discharged as a result of manufacturing operations, as well as public water treatment facilities.

Greenhouse gas (GHG)

Carbon dioxide (CO₂) and other emissions that are believed to contribute to global warming, also known as climate change.

GRI

The Global Reporting Initiative is a multi-stakeholder group focused on developing and disseminating globally applicable sustainability reporting guidelines.

ISO

International Organization for Standardization.

LCA

Life Cycle Assessments are part of the Product Stewardship process to track the life cycle impact of our products.

LCLL

The Low Caustic Leaching and Liming process developed by Alcan researchers as a means to treat spent potlining.

OECD

Organisation for Economic Co-operation and Development.

OHSAS

Occupational Health and Safety Assessment Series.

PAH

Polycyclic aromatic hydrocarbons (PAHs) are environmental contaminants that are primarily derived from the incomplete combustion of any organic material, including fossil or synthetic fuels. In the aluminum industry, PAHs are generated in smelters using older Söderberg technology. PAHs are also generated by forest fires, wood heating and incineration.

Petajoules

A metric measurement unit for energy based on joules. One petajoule = 10¹⁵ joules, or one million gigajoules.

PFC

Perfluorocarbons (PFCs) include CF₄ and C₂F₆ gases that have a very high CO₂ equivalency and constitute major contributors to greenhouse gas emissions. PFCs occur as a result of anode effects in smelting operations.

Prebake

Prebaked technology applies to modern anodes used in the smelting process that are "prebaked" as opposed to being baked during the reduction process as with older Söderberg technology. PAHs are captured in the anode-baking furnace during the baking process.

Söderberg

Reduction cell technology used in the smelting process where the anode is made of a block of paste that bakes as it approaches the reaction zone in the cell.

Spent potlining

This is the residue lining, made up of bricks and carbon, inside the pots used in aluminum smelting. When the lining deteriorates to the point of being replaced, the material becomes spent potlining (SPL).

TARGET

Alcan's greenhouse gas emissions reduction program.

UBCs

Used aluminum beverage cans.

United Nation's Global Compact

This is a voluntary international initiative launched by the United Nations in 1999 that promotes the development of a more sustainable and inclusive global economy.

VOC

Volatile organic compound.

WBCSD

World Business Council for Sustainable Development.

Symbols

CO₂ carbon dioxide
CO₂e carbon dioxide equivalent
GJ gigajoule
kg kilogram
km kilometre
kW kilowatt
kW-h kilowatt hour
M³ cubic metre of water
MW megawatt

TELL US WHAT YOU THINK

Thank you for having taken the time to read Alcan Sustainability Report 2005. We would be pleased to receive your feedback.

1. How much of the report did you read? All The majority Some

2. Overall, how do you rate the report? Not at all informative/useful 1 2 3 4 5 Extremely informative/useful

3. Please rate the report on the following criteria by circling the number that best corresponds for each:

	Poor	Unsatisfactory	Good	Very good	Excellent
Substance/Content	1	2	3	4	5
Credibility	1	2	3	4	5
Readability/Understanding	1	2	3	4	5
Completeness	1	2	3	4	5
Appearance/Format	1	2	3	4	5

4. What is your opinion on the following sections? Check all that apply.

	Clear	Useful	Interesting
CEO Message	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Company Profile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Managing for Sustainability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Climate Change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Natural Resource Stewardship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Community Development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Well-Being	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental Releases	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Innovation and Industry Shifts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Product Stewardship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. As a result of reading the report, do you have a clear and sufficient understanding about Alcan's approach to corporate sustainability?

	Yes	No
Program	<input type="checkbox"/>	<input type="checkbox"/>
Policies	<input type="checkbox"/>	<input type="checkbox"/>
Performance	<input type="checkbox"/>	<input type="checkbox"/>

6. What additional information would you like to see in future reports?

7. All comments are welcome.

8. Are you?

- An Alcan employee An Alcan shareholder An Alcan customer An Alcan supplier
 A member of: the community the government an NGO academia
 Other (please specify) _____

9. Do you wish to have more information about sustainability at Alcan? If so:

Visit Alcan's Website at www.alcan.com for relevant updates.
 Please indicate your mailing information below:

Name _____

Address _____

Country _____ Email _____

THANK YOU

Please forward the completed form to:

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