



A Natural Step Case Study Alcan Bauxite and Alumina, a business group of Alcan



Gove Bauxite Mine, Australia

MOVING TOWARD SUSTAINABILITY IN THE RESOURCE COMMODITY INDUSTRY

Committed to sustainability yet increasingly reliant on projects based in lesser-industrialized countries, Alcan Bauxite and Alumina (B&A) uses The Natural Step Framework to develop a sustainability vision that brings social and environmental concerns even more into focus.

Since its founding in 1902, Alcan has been synonymous with the production of aluminum. Today, operating through four global business groups – Bauxite and Alumina, Primary Metal, Engineered Products and Packaging – Alcan is one of the world's largest suppliers of bauxite, alumina and aluminum, and is also a provider of engineered and packaging materials. Alcan has a deep commitment to sustainable value creation.¹

B&A provides smelter-grade alumina to Alcan Primary Metal and external customers as well as providing specialty aluminas for third-parties. The group also purchases bauxite and alumina for third parties, and manages a global transportation network

of trucking, rail, marine shipping and port facilities. With 16 operating facilities in Australia, Brazil, Canada, France, Germany, Ghana and Guinea, B&A's 2006 revenues were US\$ 3.8 billion accounting for approximately 16 percent of Alcan's 2006 revenues of US\$ 23.6 billion. In the same year, B&A's operations accounted for approximately 10 percent of global bauxite production and 9 percent of the world's alumina production.

In January 2007, The Natural Step began collaborative work with B&A with a particular focus on the sustainability of the group's major development projects.

¹ Bauxite is the mineral in which alumina deposits are found, and which must be processed to produce alumina. It takes some four to five tonnes of bauxite, depending on the ore's quality, to produce about two tonnes of alumina, which in turn yields one tonne of aluminum.

FOCUS ON SUSTAINABILITY

Alcan is recognized as an industry leader in sustainability. Since 2001, the FTSE4GOOD Index² series has included Alcan on its list of companies that are meeting globally recognized corporate responsibility standards. In 2005, Alcan was selected as a Dow-Jones Sustainability World Index Super-Sector Leader. The same year saw Alcan receive the “Globe award for environmental excellence” in the Globe Foundation’s Corporate Competitiveness category.

Alcan’s general approach to sustainability incorporates three key elements: 1) taking a broad view of social, economic and environmental impacts of its business; 2) engaging and partnering with an increasingly diverse circle of stakeholders; and 3) making intra-business connections to embed this understanding of sustainability in the business itself. Like many progressive organizations, Alcan understands that receiving external acknowledgement for its sustainability-related efforts does not equate to achieving sustainability itself, and to actually become sustainable the organization must continuously strive to surpass the goals it sets for itself. As Daniel Gilbert, B&A’s Director of Environment, noted: “It’s not just about the sustainability report. We have to be sustainable in our actions, day-to-day.”

Alcan is convinced that there is an increasingly close relationship between the protection of the environment, socio-economic progress and competitive advantage. Alcan fully understands that in order to be successful, they need a healthy society and a productive workforce, just as a healthy society needs successful companies that create jobs, wealth and innovations that improve standards of living and social conditions.

Bauxite is generally found in tropical regions in lesser industrialized countries. Mining can bring improvements to standards of living, but it can also significantly change communities. This is why managing the social aspect of sustainability — through construction, operations, growth and



Bauxite Mining at Gove

eventual closure — is a key challenge for B&A and its host communities. Current estimates suggest that well over half of B&A’s future projects will involve bauxite deposits in such countries — a reality that presents a host

of challenges and risks, as well as opportunities. Doing the right thing, the right way, not only ensures good stewardship of resources but also enhances B&A’s ability to access new ones and to develop them at an acceptable level of risk to the company. In this capital-intensive business, doing the right thing at the outset of a project can significantly reduce a project’s risk and in fact, be a true competitive advantage.

To deal with these concerns, B&A has created a team focused on Sustainability, which, among other things, is responsible for community outreach and multi-stakeholder engagement. Among the questions the department’s leaders have to wrestle with are:

- ⊙ How can B&A ensure it maintains its social license to operate?
- ⊙ How can B&A build mutually beneficial relationships with local communities, ensuring that those communities benefit from B&A’s presence?
- ⊙ How can B&A integrate and respect local realities while it undertakes its operations?
- ⊙ How can B&A achieve sustainability within its present and future business operations?

² The FTSE4Good Index Series measures the performance of companies that meet globally recognized corporate responsibility standards.

In January, 2006, a new position, Director of International Affairs, was created within B&A and Claude Perras was hired to fill the posting. Claude's previous international experience in the NGO sector at both the grassroots and management levels had equipped him to address the pressing issues that B&A was facing with regards to sustainability. Claude's initial mandate was to create a sustainability framework to guide business development. One of his first actions was to engage site-level managers in dialogue about the importance of adopting a sustainability agenda. He soon realized however that B&A's global management team (operational and functional) had to be included in the dialogue if he was to succeed at his mandate. Accordingly, B&A's management team was engaged in a deeper conversation about sustainability.

Perras and his team knew from the outset that the dialogue they needed to have with these leaders had to be based on as broad and comprehensive an understanding of sustainability as they could find. Kariann Aarup, a member of Perras' team who was familiar with The Natural Step (TNS), recommended they consider using the TNS Framework.

The Natural Step framework is very structured and helps to get people onto the same page. It helps. A lot!

CLAUDE PERRAS
B&A'S DIRECTOR OF INTERNATIONAL AFFAIRS

ALCAN BAUXITE AND ALUMINA AND THE NATURAL STEP

In the fall of 2006, TNS Executive Director, Kelly Baxter, and Senior Sustainability Advisor, Chad Park, gave an introductory presentation on the TNS framework to B&A's sustainability team in Montreal. On the strength of the presentation, and encouraged by the accessible expertise of Joe Herbertson of TNS Australia, himself a veteran in the resource-commodity sector, the team decided to host a Natural Step workshop with B&A's management team.



N.Walker & K.Chittick working at alumina tri-hydrate on conveyor 7 at Gove

The Montreal workshop

In January 2007, Joe Herbertson and Chad Park facilitated a TNS Backcasting Workshop for B&A's management team. The workshop had two main goals: first, for the team to develop a sustainability vision that would guide B&A's sustainability strategy moving forward; secondly, to align the management team with a shared definition and understanding of sustainability and to build buy-in for the sustainability vision. Early in the workshop, participants identified two critical sustainability challenges for B&A:

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- © Meeting company growth expectations. To grow as projected, B&A must operate in countries with a variety of social sustainability challenges, often including a lack of skilled workforce. Accordingly, there is a need to partner locally to build the capacity required for B&A's potential operations and thus build B&A's overall capacity in these regions. Participants recognized that an important key to B&A meeting its growth expectations in such places was to build relationships and trust between itself and its operating communities.
- © Addressing the issue of emissions associated with bauxite mining and alumina production. Based on an understanding of The Natural Step's 'funnel', participants recognized that there is tremendous business profitability potential in reducing carbon emissions, and genuine risk to the company if they do not.

Other, less significant issues discussed included the production and disposal of 'red mud', a by-product of alumina production that contains recoverable minerals; and also issues of water use and land rehabilitation.

From these preliminary insights, the participants proceeded to develop a sustainability vision facilitated by The Natural Step science-based understanding of sustainability and developed through backcasting from sustainability principles.

The Natural Step Framework is useful because it provides a shared mental model and vocabulary. Sustainability doesn't seem overwhelming and incomprehensible any more – everybody gets it!

KARIANN AARUP
B&A'S SUSTAINABILITY TEAM

B&A'S SUSTAINABILITY VISION

We embrace the sustainability challenges we face. We will harness our capacity for innovation, become the supplier & project developer of choice by decreasing our footprint on the planet and leaving environmental and social conditions that will create value for all stakeholders
ENVIRONMENTAL FOOTPRINT
We manage mining, processing, residue storage and rehabilitation such that reduce the impact of our operations on the environment and seek to be restorative
SOCIETAL FOOTPRINT
We engage with our stakeholders in such a way that we create and support social, economic and political conditions that enhance people's ability to meet their fundamental needs

Heading to Brisbane

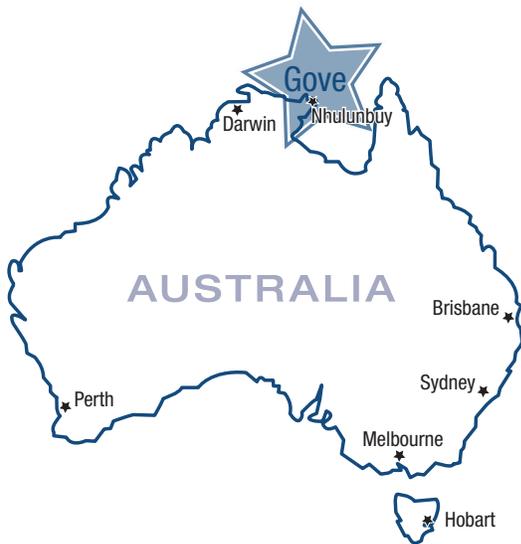
After the success of the Montreal event, a second workshop was held in Brisbane, Australia, the head office of B&A's Pacific Operations. The purpose of the Brisbane workshop was not only to create the space for a cross-functional sustainability conversation, but more pragmatically to operationalise the vision in B&A's largest bauxite mining/alumina refining operation at Gove in Nhulunbuy, in the Northern Territory of Australia.

The sustainability challenges faced at Gove are formidable: the operation is situated on aboriginal land that is vulnerable to loss of biodiversity and that has a community with significant social needs and limited water supply. As such, it represents a fair test and a rich learning opportunity for any business wishing to develop a sustainable project in a lesser-industrialized area.

The Brisbane workshop was held in June 2007 with Joe Herbertson as lead facilitator. The participants were functional

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and operational managers from B&A's Pacific Operations. Through the workshop, the group worked on identifying the sustainability issues that Gove will be facing and will face in the coming years.



The Natural Step helps to structure your thinking. It's very, very helpful to see the conditions that undermine people's ability to meet their needs. It allows you to focus on the fundamental problem and is very useful in talking about social issues.

JOE HERBERTSON
TNS AUSTRALIA, CO-FACILITATOR OF
THE BRISBANE TNS/B&A WORKSHOP

The list included:

- ⊙ managing/reducing the refinery's greenhouse gas (GHG) emissions;
- ⊙ optimizing energy use for the entire plant;
- ⊙ attracting and retaining skilled labour; and
- ⊙ achieving meaningful and respectful engagement with the local aboriginal communities.³

Aside from identifying challenges, workshop participants also identified opportunities for development that could support the economic, social and environmental sustainability of B&A and the Gove refinery. Each opportunity builds on a strategy of leveraging existing B&A talents, resources and initiatives, and seeks to leverage the same at Gove. The opportunities include:

- ⊙ Developing Alcan — and in this case B&A — as a key player within a wider context of regional development, providing employment, sharing best-practices and developing good government relations;
- ⊙ Taking a holistic approach to the integrated social, economic, environmental and political systems of the Gove Peninsula by building on (amongst others things) the traditional local values of landcare, B&A's current recycling and rehabilitation initiatives as well as Alcan's EHS FIRST management system.⁴
- ⊙ Becoming a global leader in developing ways to reduce mining and processing-related emissions; and
- ⊙ Building on its, already successful, programs aimed at developing stronger partnerships with aboriginal communities.

³ While what exactly constitutes an appropriate level of aboriginal engagement was not clear to the workshop participants, they were very aware that aboriginal peoples must be included in any discussion that might affect their communities and land. They also believe that aboriginal communities should benefit from B&A's presence. The challenge, they agreed, is how to turn good intentions into reality in a setting known for social, cultural, linguistic and economic differences.

⁴ EHS FIRST underpins Alcan's commitment to "deliver world-class environment, health and safety (EHS) performance by providing common standards and procedures and by focusing employees on implementing best practices to achieve EHS excellence."

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Aerial View of Gove Alumina Plant & Bauxite Mining

With the list of challenges and opportunities in hand, participants then asked themselves what an economically viable and socio-ecologically sustainable B&A might look like in the future. Thinking particularly of the Gove refinery, they imagined an operation that would:

- ⊙ continue to be aligned with Alcan values;
- ⊙ be compatible with the fundamental Natural Step sustainability principles; and
- ⊙ be aligned with the sustainability vision developed during the Montreal TNS workshop.

Further, they decided that decisions made concerning Gove would include a timeline that was long enough to integrate what 'could be' and what 'should be'; and that a systems approach would be used in looking at issues that cross operational or functional lines.

ALCAN VALUES

- **Integrity:** Operating with integrity in all business dealings, conducting themselves in a responsible fashion as outlined in Alcan's Worldwide Code of Employee and Business Conduct, which also applies to Alcan's contractors, consultants and suppliers.
- **Accountability:** Striving to be openly accountable and willing to align decision-making power with responsibilities at all levels of our organization.
- **Teamwork:** Leveraging the abilities of employees, suppliers, contractors, customers through a cooperative team approach to problem solving and project implementation.
- **Trust and transparency:** Having trust at the core of all ethical business dealings: trust that others will do as they say and trust that Alcan will live up to its commitments.

The participants also envisioned a future for Gove and B&A that included:

- ⊙ In addition to the corporate sustainability commitment, that personal commitments be made by those from Gove; recognizing that, the combination will be a powerful force in moving the whole company towards a more sustainable future;
- ⊙ being viewed by the community as a valued member of the community;
- ⊙ setting bold objectives by aiming for 'no systemic harm' rather than 'minimizing systemic harm' as a standard; and
- ⊙ implementing leading-edge indicators that are focused on performance rather than compliance, which would evaluate and demonstrate the progress toward sustainability.

As a final step, B&A Pacific participants brainstormed potential social, environmental and management innovations that might lead them towards their envisioned future. The ideas were then discussed and divided into prospective long-term and short-term measures. Examples included:

- ⊙ Short-term social innovation: ensuring that all staff who support the Gove operation go through cultural awareness training;
- ⊙ Longer-term social innovation: using more third-party auditing and monitoring and making Nhulunbuy a leading example of recycling in Australia;
- ⊙ Short-term environmental innovation: making B&A a corporate leader in energy efficiency with a focus on alternative energy sources and applications; and
- ⊙ Longer-term environmental innovation: establishing recycling in the Gove facility and developing technologies for getting greater value out of Gove's waste streams.

FURTHER IMPACTS FROM THE NATURAL STEP ENGAGEMENT

Since the first backcasting workshop in January 2007, the common sustainability framework between B&A managers has made it possible to undertake other sustainability initiatives internally:

- © Sustainability is now integrated into monthly and quarterly reports;
- © Sustainability on-line learning tools are being tested and a sustainability training strategy is being developed;
- © R&D are more explicitly stating that sustainability objectives are motivating their innovation efforts;
- © Methodologies are being developed to integrate sustainability criteria and principles into new project planning; and
- © A cross functional working group has been established to quantify the business value of sustainability investments.

People want to be involved.
They are compelled to come forward.
It's creating potential for
cross-disciplinary task forces
and really sparking
generative conversations.

KARIANN AARUP
B&A SUSTAINABILITY TEAM

LAST WORDS

On July 12, 2007, shortly after B&A engaged TNS, Alcan announced that it would combine with resource-commodity giant Rio Tinto. The transaction is scheduled to be completed during the fourth quarter of 2007.

While it is not yet clear how B&A will continue along its path to sustainability, it is important to note that Rio Tinto's commitment

to sustainability mirrors that of Alcan. How the two companies will build on the synergy between their respective sustainability strategies remains to be seen.



Seed Collecting at the mine for rehabilitation work at Gove

Looking into the future, there is strong evidence

that a solid track record in sustainability could be what tips the scale in one's favour against the competition.

Profitability, increased market share and competitive advantage will be about thinking differently, operating differently and being inspired by a vision for the long term that is firmly rooted in a sustainable future.

ADDITIONAL INFORMATION

<http://www.alcan.com/web/publishing.nsf/content/Sustainability+Home>

<http://www.thecrucible.com.au>

This case study was written and researched by Sarah Brooks and edited by Bart Robinson for The Natural Step Canada. Thank you to Claude Perras, Daniel Gilbert, Joe Herbertson, Kariann Aarup for granting The Natural Step interviews. Creative Commons Copyright 2007 Some rights reserved

