

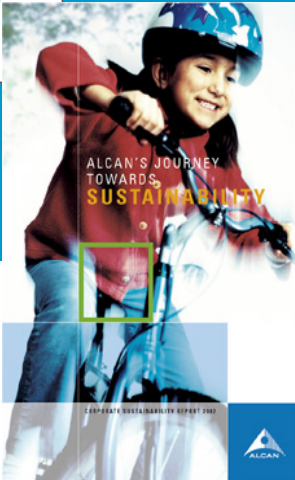
# Sustainability - A Foundation for the Future

## 可持续发展力-未来发展的基石

Alcan Inc., /APMG  
Beijing, 6 September 2005



WORLDWIDE CODE  
OF EMPLOYEE AND  
BUSINESS CONDUCT





## Overview

- Introduction to Alcan
- Alcan 一瞥
- Sustainability @ Alcan
- 可持续发展在加铝
- Sustainability Services of Interest
- 可持续发展服务 - 要点
- Alcan's Corporate Goals and Sustainability Services
- 加铝的企业目标与可持续发展服务之联系
- Characteristics of a Sustainability Project
- 可持续发展项目的特点



# Alcan Inc. a global presence

Alcan 一瞥

*A balanced presence and a global reach*

*平衡分布，遍及全球*

## North America北美

**Employees:** 24,000 员工: 24,000

## Europe欧洲

**Employees:** 34,500 员工: 34,500

## South America/Australia/Asia/Africa/Middle East

南美/澳大利亚/亚洲/非洲/中东

**Employees:** 10,500

员工: 10,500

## **North American Global Headquarters:**北美全球总部

Bauxite & Alumina铝土矿和氧化铝

Primary Metal原铝公司

Montreal蒙特利尔

Montreal蒙特利尔

## **European Global Headquarters:**欧洲全球总部

Packaging包装公司

Engineered Products工程产品公司

- Rolled Product Europe欧洲铝轧制

Paris法国

Paris法国

Zurich苏黎世

## Alcan Inc.加铝公司

**Pro Forma 2003 Revenues:** US\$24.9 billion

2003年预计收入: 249亿美元

**Employees:** 69,000 员工: 69,000

**Facilities:** over 470 工厂: 超过470

**Countries:** 56 国家: 56个





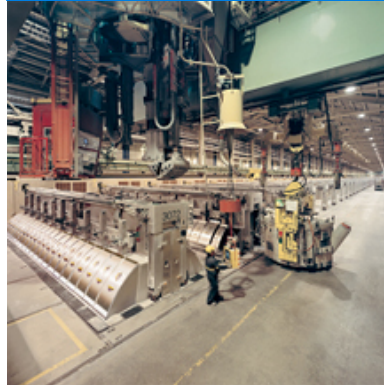
# Alcan Inc. – by Business 加铝公司业务一瞥

## Four business groups 四个业务集团

**BAUXITE AND ALUMINA**  
铝土矿和氧化铝集团



**PRIMARY METAL**  
原铝集团



**ENGINEERED PRODUCTS**  
工程铝制品集团

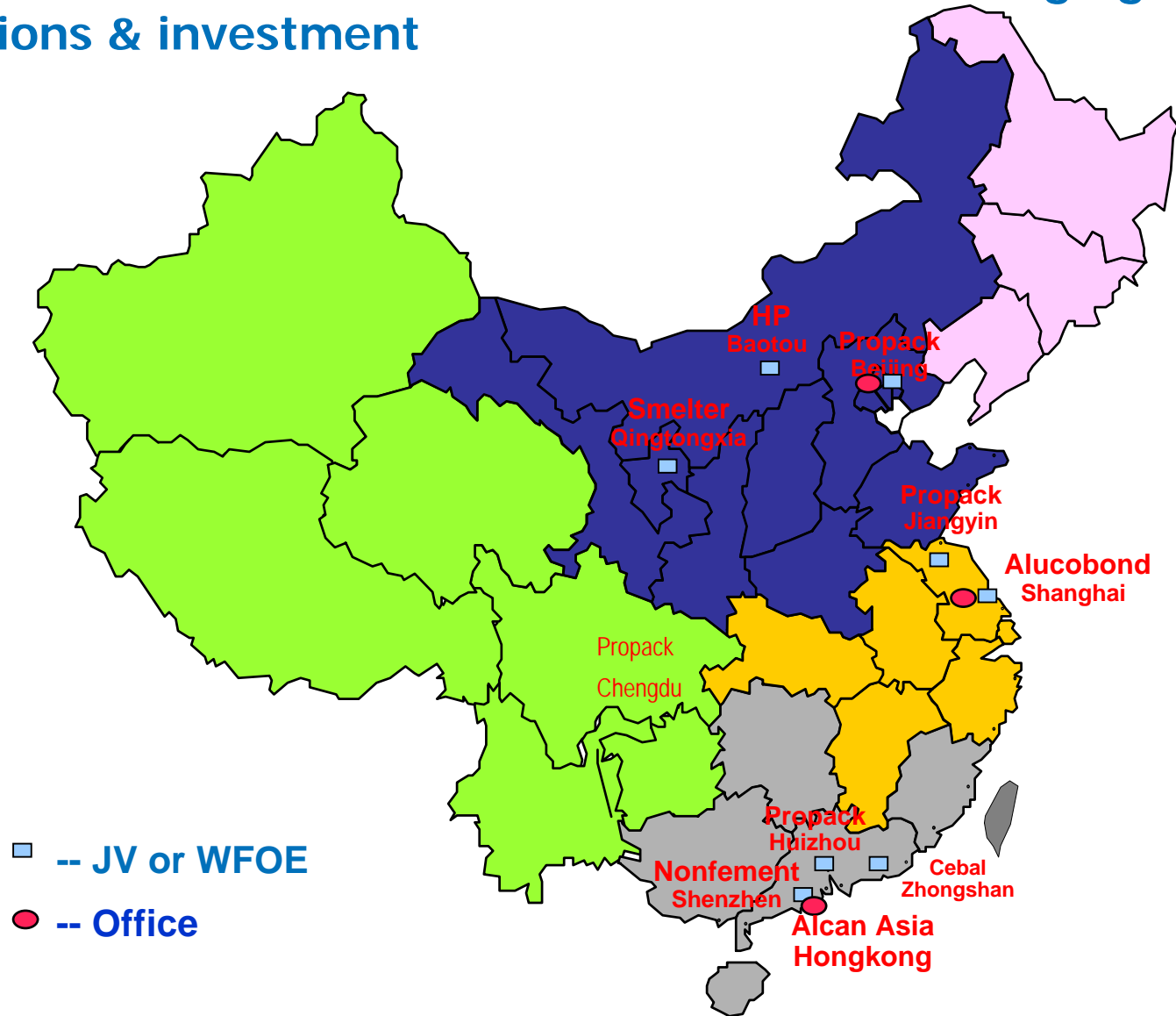


**PACKAGING** 包装集团





# Placeholder – Alcan China info / APMG, EP, Packaging – locations & investment





## Alcan In China—Alcan Ningxia Aluminum Company Limited 加铝在中国—加宁铝业有限公司

- **Established in June 2004**
- 成立于**2004年6月**
- **50% held by Alcan, 50% by Chinese Partner (QTX etc.),**
- 加铝控股**50%**，中方（青铝等）控股**50%**。
- **Smelter Capacity: 150,000kmt/y**
- 电解铝产能：**15万吨**
- **Employees: 1000**
- 员工：**1000**
- **Technology: 200kA prebaked pots (260 pots)**
- 电解槽技术：**200kA预焙电解槽（260台）**
- **Dry Scrubbing for potroom**
- 电解采用**干法净化设施**



## The Challenge挑战

**... development that meets the needs of the present without compromising the ability of future generations to meet their own needs ...**

我们要不断发展来满足我们现有的需要，但是我们不能为了满足我们现有的需要而影响到我们的后代生存。

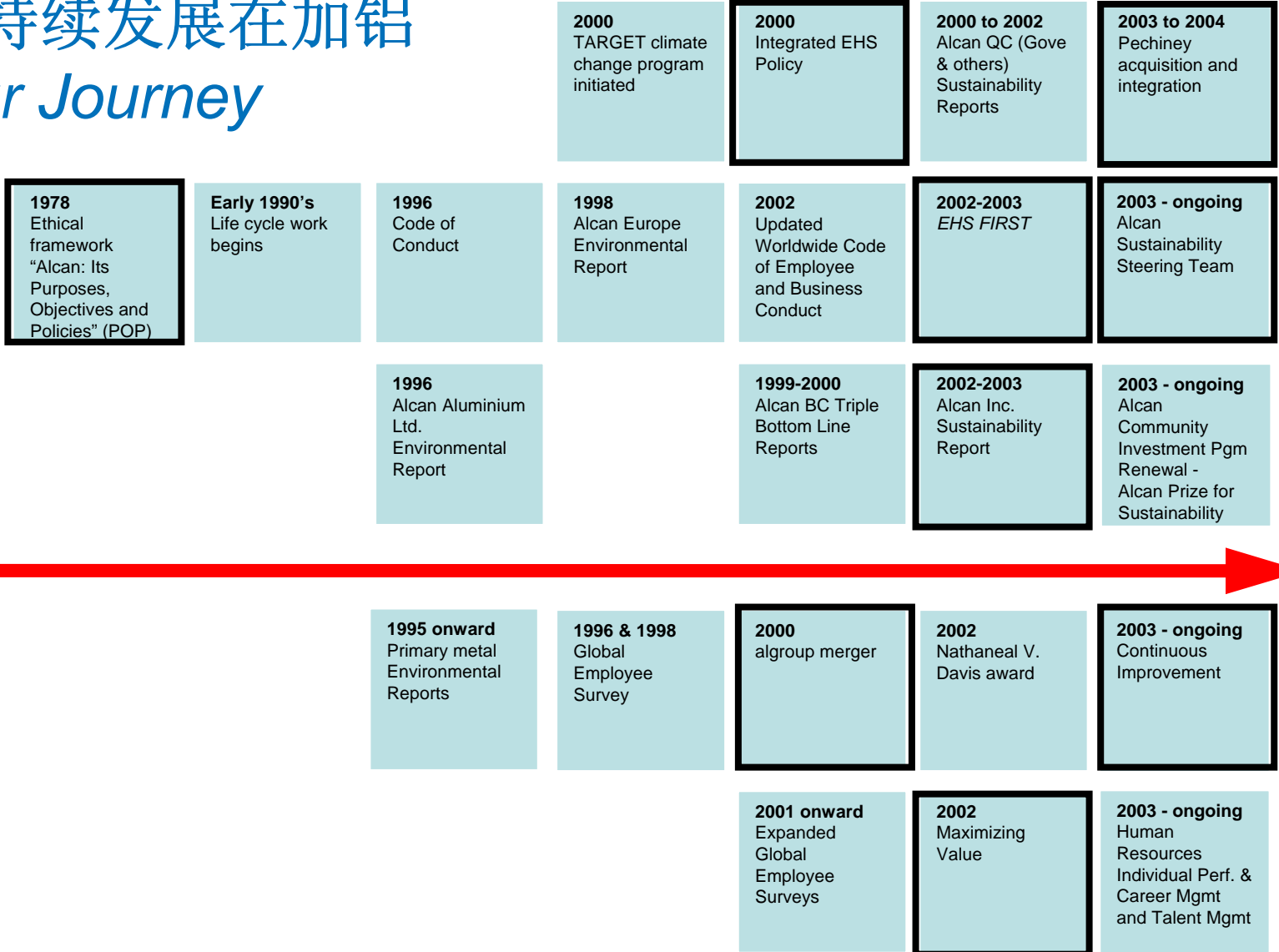
-- Brundtland Commission, 1987 --



# Sustainability @ Alcan

## 可持续发展在加铝

### Our Journey







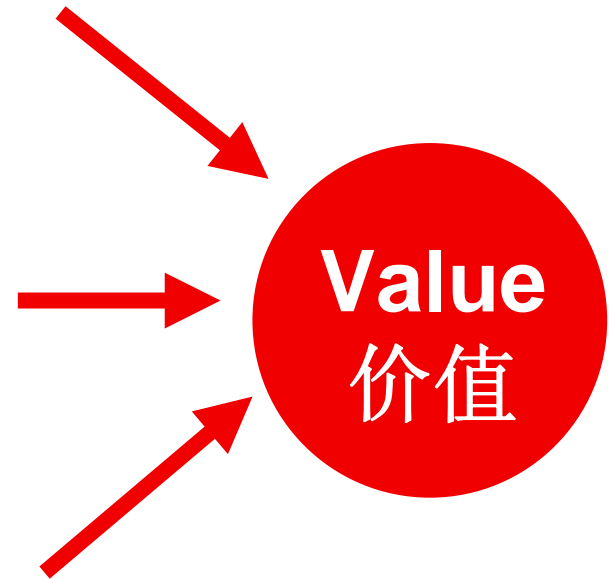
# How Can We Capture and Deliver Social, Environmental and Economic Value? 我们怎样才能获取和传递社会，环境和经济价值？



**Think broadly** about issues and impacts  
充分考虑问题和影响

**Engage and partner** with stakeholders  
与利益相关方交流和合作

**Make connections & integrate sustainability** into our business  
将可持续发展力融入公司的业务



Financial value is necessary but not sufficient to excel



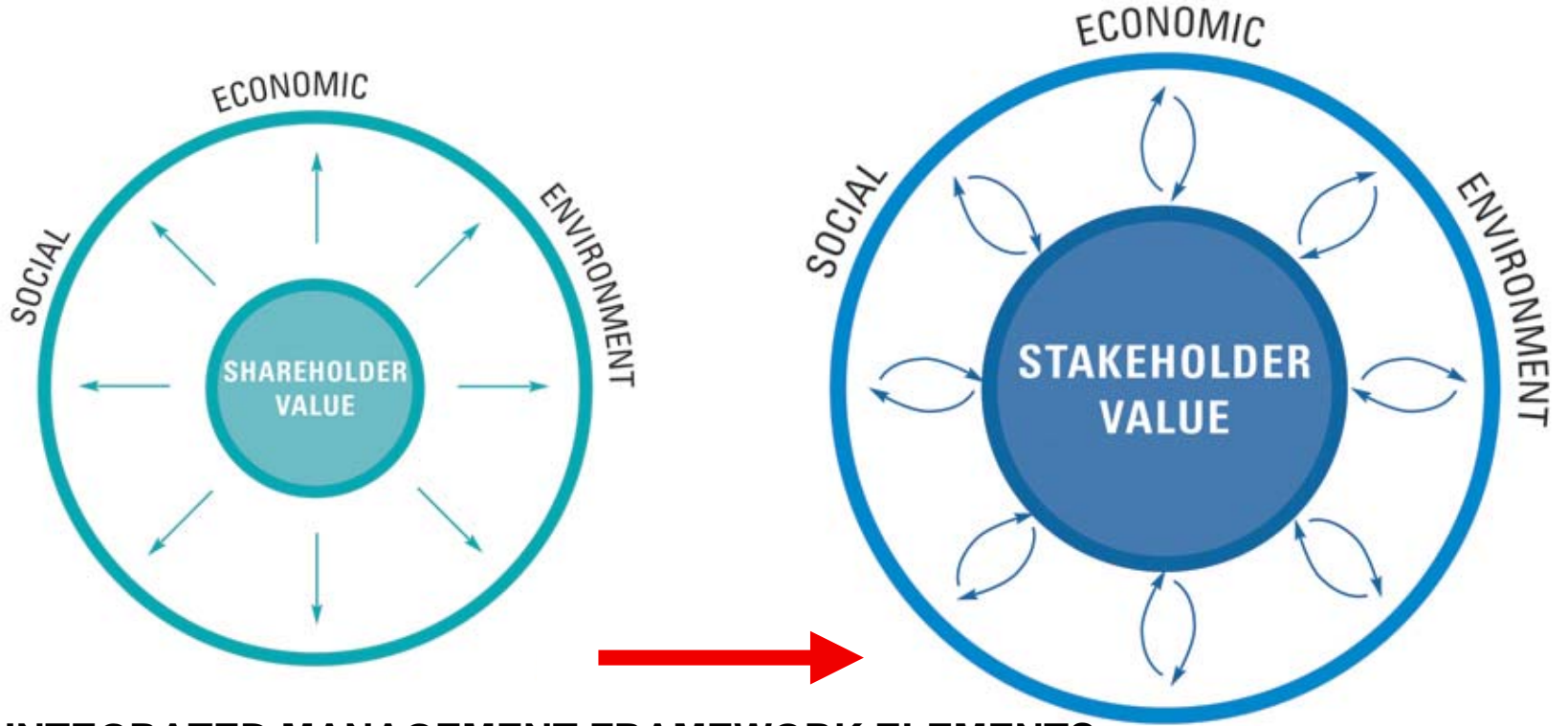
## Sustainability @ Alcan

### 可持续发展在加铝

- An evolution from traditional shareholder value orientation to a 'shareholder plus' / stakeholder value orientation
- 由传统以股东利益为先的立场进化至以股东及/利益相关者为先
- An emphasis on identifying the sustainability 'opportunity', in addition to better managing risks and impacts through a sustainability mindset
- 除通过建立可持续发展的心态以达到完善得管理风险及影响，更强调去确认每个可持续发展机会
- Embedding sustainability considerations in our activities, business systems and processes and in the business functions (engineering, human resources, procurement, *EHS FIRST*, etc.)
- 将可持续发展的考虑融入我们的行动、商业系统与程序及各种职能如工程、人力资源、采购和EHS第一等
  - Alcan has identified 8 strategic sustainability issues which it is incorporating into its operating agenda. These include:
  - 加铝已把以下八项策略性可持续发展议题并入业务议程中：
    - *Energy* 能源
    - *Climate Change* 温室效应转变
    - *Natural Resource Stewardship* 天然资源管理
    - *Community Development* 社区发展
    - *Well Being* 福利
    - *Environmental Releases* 环境污染排放物
    - *Innovation and Industry Shifts* 创意及工业更替
    - *Product Stewardship* 产品管理



## Creating Value through an Integrated Management Framework 通过整合管理体系来创造价值



### INTEGRATED MANAGEMENT FRAMEWORK ELEMENTS

整合管理框架要素

Maximizing Value, *EHS FIRST*, Continuous Improvement

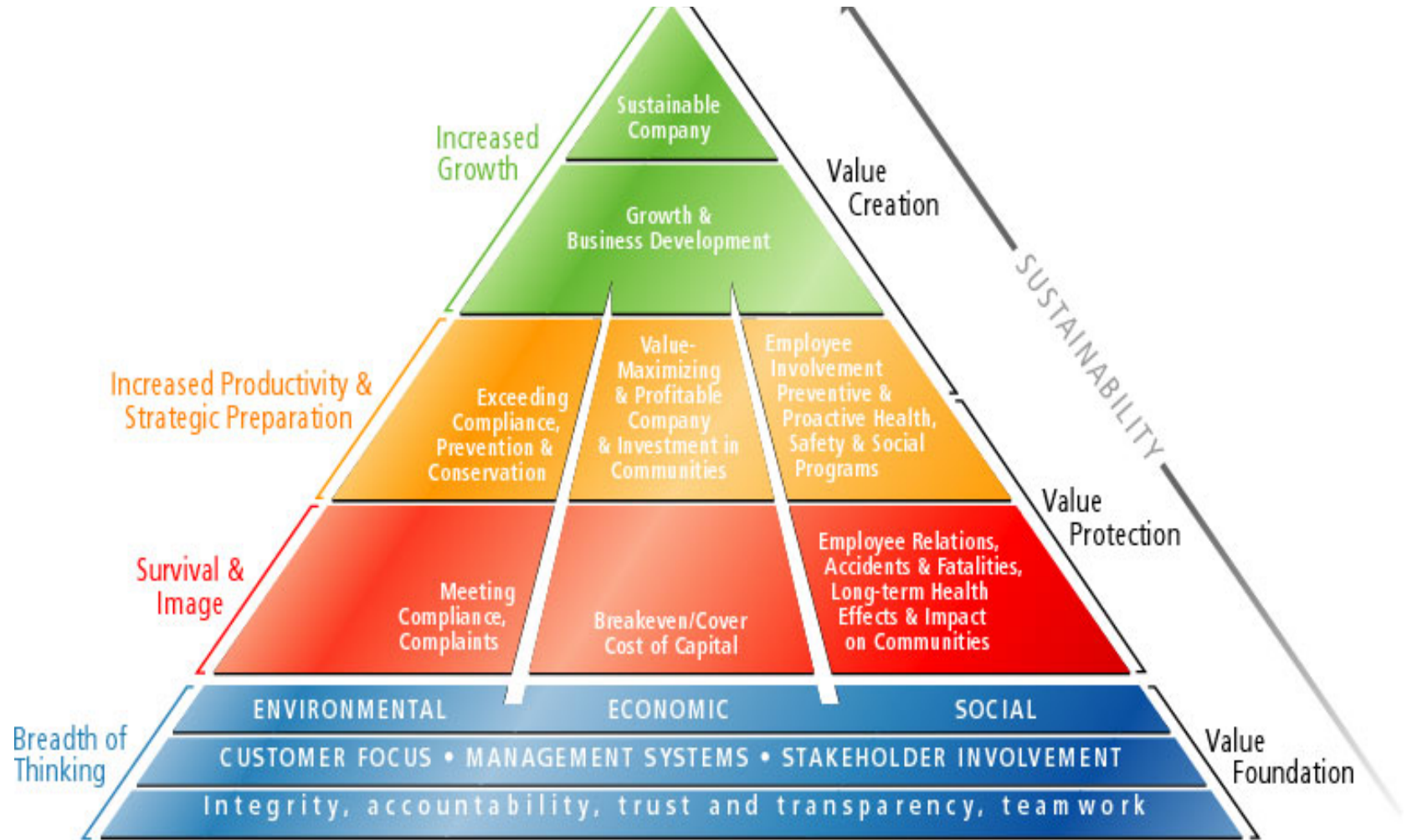
最大化价值, **EHS** (环境、健康和安) 第一、持续改进

- supporting our drive towards sustainability 支持我们朝可持续发展前进。



# Our Evolving Sustainability Framework

## 我们所推动的可持续发展框架





## Alcan's Areas of Focus (The "Alcan 8") – contributing to maximizing value 加铝的关注范围 – 贡献于价值最大化

- Energy Consumption - access, cost, mix  
能源消耗 – 使用、成本、能源综合利用比例
- Climate Change - production performance, policies, allocations, cost  
趋势转变 – 生产表现、政策、资源分配、成本
- Natural Resource Stewardship - conservation, access, cost  
天然资源管理 – 保护、使用、成本
- Community Development - impacts, benefits, stakeholder engagement  
社区发展 – 影响、得益、利益相关方的参与
- Well Being - H&S, work-life balance, community and consumer health  
福利 – 健康与安全、工作/生活的平衡、社区和消费者健康
- Environmental Releases - emissions to air/land/water, compliance, remediation  
环境污染排放物 – 对空气/土地/水源排放、承诺、矫正
- Innovation & Industry Shifts - consumer preferences, markets, technologies  
创意与工业环境更替 – 消费者取向、市场、科技
- Product Stewardship - life cycle analysis, appropriate use, recovery  
产品管理 – 寿命周期分析、适当的运用、恢复



## Alcan's Integrated Management System – AIMS™ 加铝的综合管理体系

- Guides us to do the right thing as we seek to generate maximum value. 当我们追求创造最大价值时，它指导我们去做正确的事情
- Used to establish priorities, shape strategies, and choose between alternatives. 用于确定优先性，形成策略，在多项选择中作出抉择
- Consists of 它们是由如下组成：
  - Maximizing Value 价值最大化
  - *EHS FIRST* EHS 第一
  - Continuous Improvement 持续改进

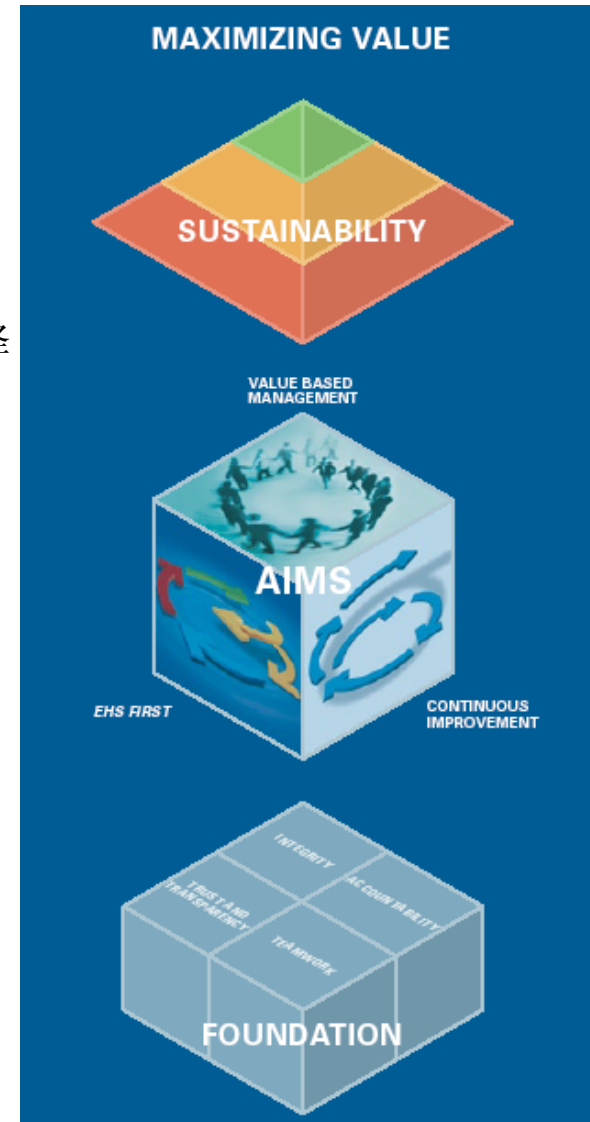
### INTEGRATED MANAGEMENT FRAMEWORK ELEMENTS

综合管理体系的框架要素

**Maximizing Value, EHS FIRST, Continuous Improvement**

价值最大化，EHS第一，持续改进

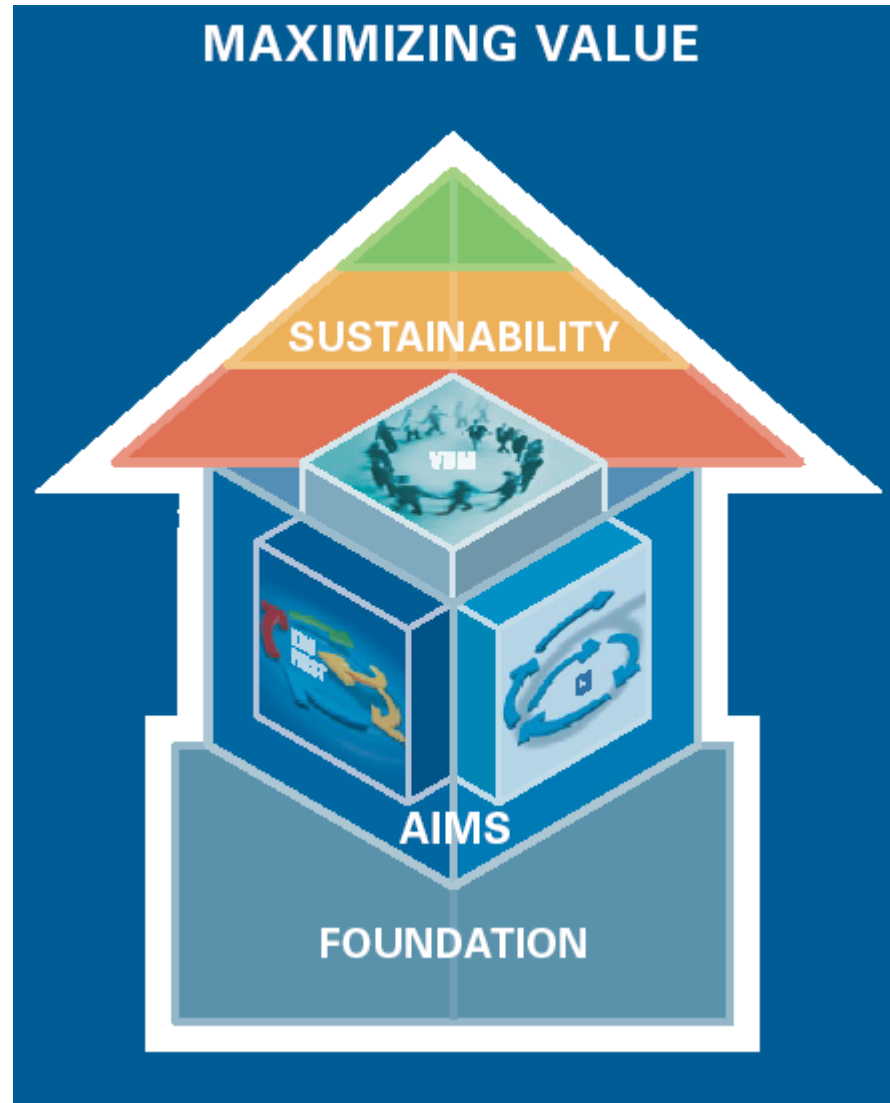
- **supporting our drive towards sustainability** 支持我们朝可持续发展前进





# Alcan's Integrated Management System – AIMS™

## 加铝的综合管理体系



Alcan  
Prize  
for Sustainability



In association with the  
International Business Leaders Forum

Working  
together  
for a better  
world







# Alcan Prize for Sustainability

## 加铝可持续发展奖励计划

**First signature project of the renewed CIP**

是持续改进计划更新后首个标志项目

**Nine year commitment**

达九年的投入和承诺

**Partnered with Prince of Wales International Business Leaders Forum**

与威尔斯亲王国际商业领袖论坛合作

### ■ What is it?

- US\$1-million prize to be awarded annually to a non-governmental organization (NGO) to recognize outstanding contributions to sustainability
- 每年对一被选出的非政府组织赠予一百万美元以表扬其对可持续性发展的贡献
- One of world's largest privately-funded awards for sustainability
- 世上其一最大型私人资助的可持续发展奖励计划
- Reflects Alcan Inc.'s strong commitment to implementing and promoting sustainability as a business management concept
- 反映加铝对实行及推广可持续发展为商业管理概念的坚定投入和承诺
- Alcan Inc.'s flagship community investment project at the global corporate level
- 加铝在环球企业层面上的旗舰社区投资计划



**Forest Stewardship Council**  
**2004 Alcan Prize For Sustainability Winner**

Working together for a better world

With operations in over 100 countries, Alcan Inc. is a global leader in aluminum and packaging, as well as aluminum recycling. We are also recognized as one of the world's leaders in promoting sustainability as a business management concept. At Alcan, we view sustainability not as a destination but as a journey of learning and change.

We firmly believe that our success as a global company is directly linked to our actions both inside and outside our operations.

This belief underlies our creation of the Alcan Prize for Sustainability – a US\$1 million prize to be awarded annually to a not-for-profit, non-governmental organization to honor outstanding contributions to the areas of economic, environmental, and social responsibility. The Alcan Prize for Sustainability recognizes the critical role of the not-for-profit sector in promoting and representing sustainable development around the world. It also recognizes that all sectors of society have a role to play in ensuring our planet for future generations – and that we give those roles most effectively when we work together.

To learn more about the Alcan Prize for Sustainability and how to apply please visit [alcanprizesustainability.com](http://alcanprizesustainability.com)

Alcan Prize for Sustainability

ALCAN

© International Prince of Wales International Business Leaders Forum



## Commitments 承诺

## Recognition 公认



- SustainAbility and UNEP
- 可持续发展和联合国环境规划署
- Corporate Knights
- 公司“骑士”
- Dow Jones Sustainability World Index
- 道琼斯世界可持续发展指数
- Innovest Strategic Value Advisors
- 战略价值顾问
- World Summit on Sustainable Development
- 可持续发展世界峰会
- Fortune Magazine: World's Most Admired Company
- 财富杂志：世界最值得赞誉的公司

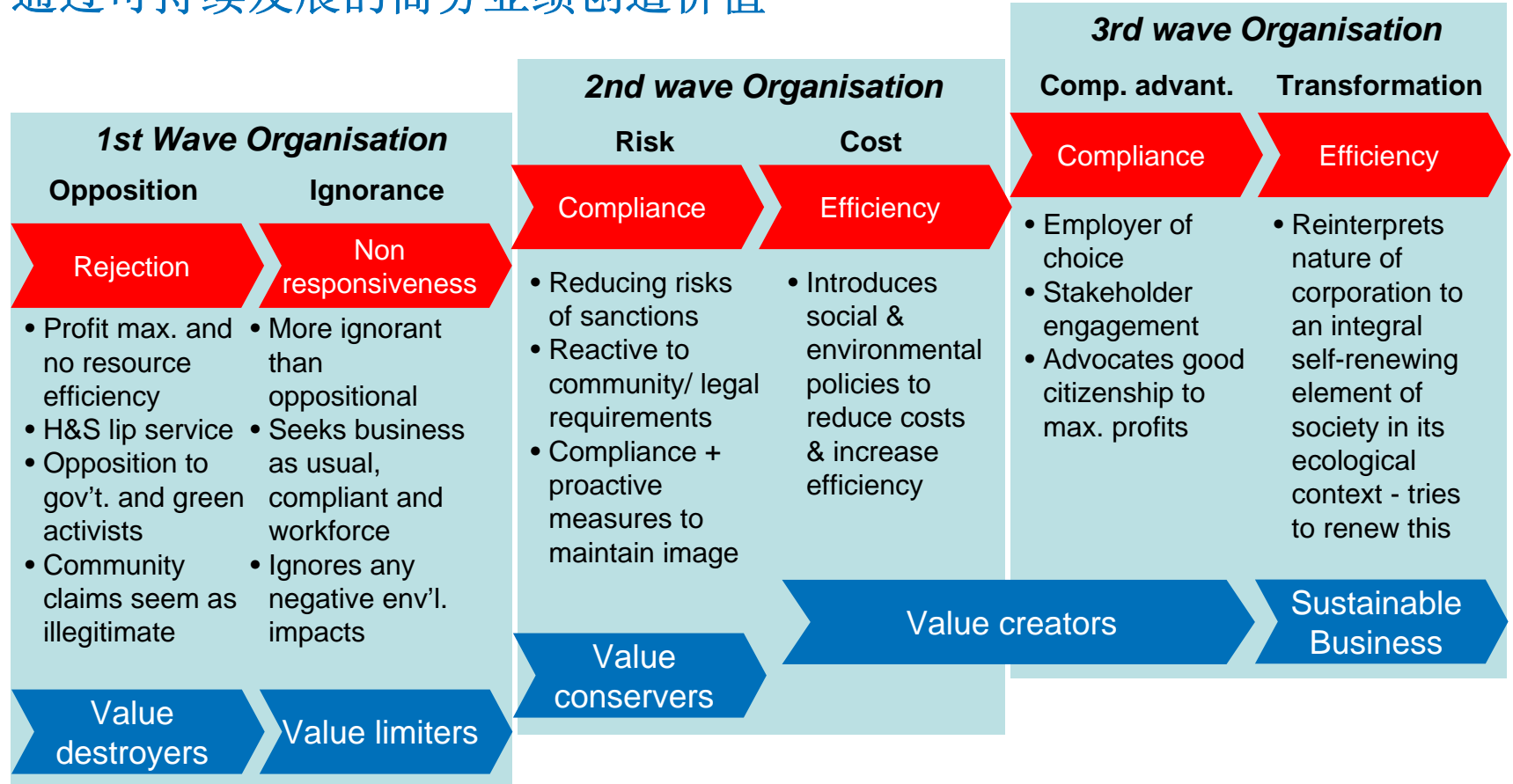
## Promoting Sustainability 推进可持续发展





# Value creation through sustainable business performance

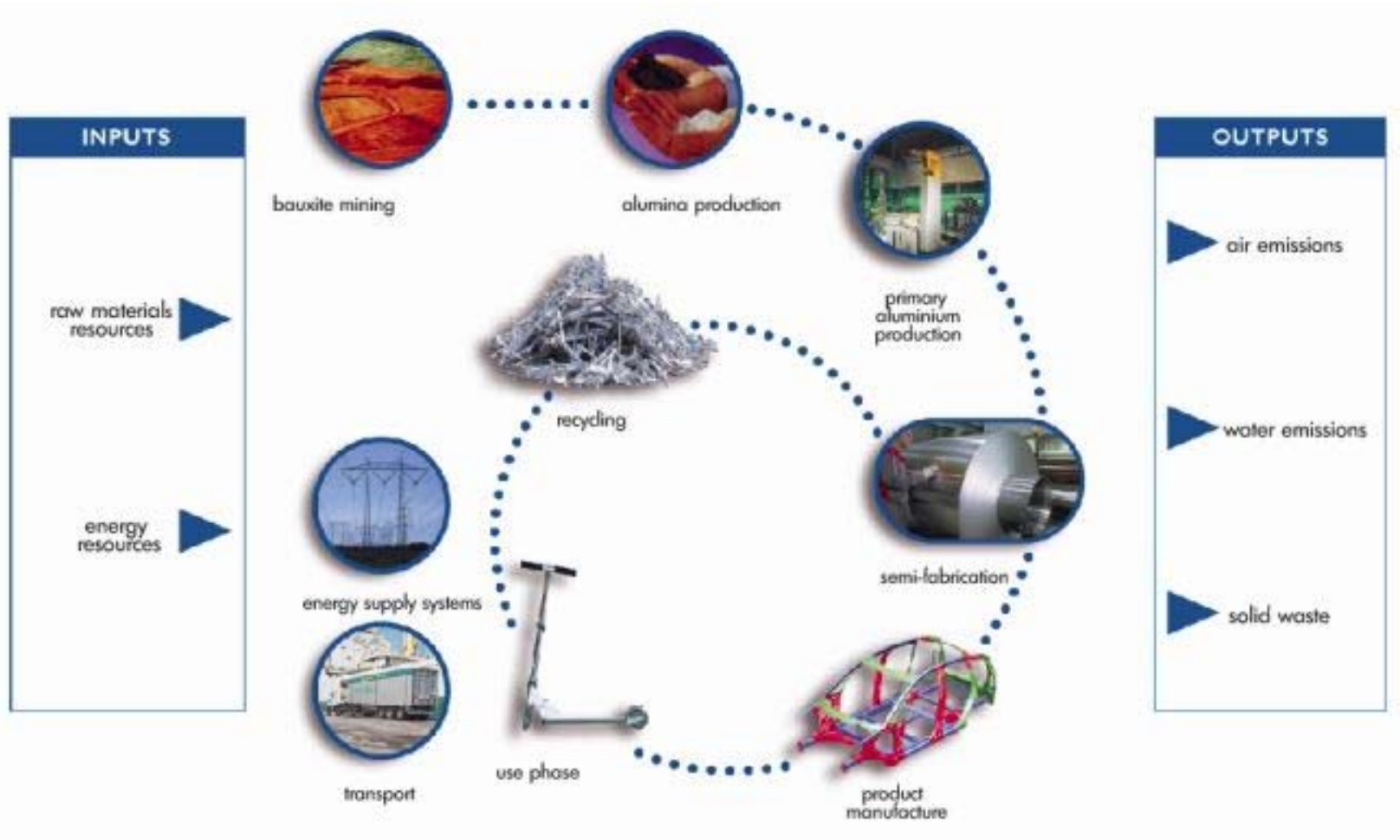
## 通过可持续发展的商务业绩创造价值



Source: Adapted from Durphy et al, 2003, Organisational change for corporate sustainability, Routledge, London



# Aluminium - a global life cycle 铝—全球性寿命周期





# European Aluminium Association Sustainability Indicators

## 欧洲铝协会的可持续发展力主要指标

### 1. Production生产

1.1. Total production总产量

### 2. Policy and management efforts政策和管理贡献

2.1. EAA sustainability mission statement可持续排放

2.2. Plant certification工厂的认证

### 3. Competitiveness竞争力

3.1. Aluminium use per capita人均铝的使用量

3.2. R&D expenditure研发费用

3.3. R&D persons employed研发力量

3.4. Value added增值

### 4. Revenues and payments收入和支出

4.1. Total revenue总收入

4.2. Taxes 税收

### 5. Employee development and relations员工的发展和关系

5.1. Training performance培训绩效

5.2. Wage level工资水平

5.3. Total number of employees员工总数

### 6. Community relationship社区关系

6.1. Community expenditure社区费用支出

6.2. Community dialogues社区对话

6.3. Community health initiatives社区的健康活动

### 7. Health and Safety健康和安

7.1. Lost time incident rate丢失工作时间事件比例

7.2. Total recordable incident rate全部可记录事件比例

7.3. Fatalities死亡

7.4. Severity rate重伤比例

7.5. Employee exposure assessment员工暴露评估

7.6. Employee health assessment员工健康评估

### 8. Resource use at global level在全球的资源使用

8.1. Bauxite availability铝土矿的可靠性

8.2. Mine rehabilitation矿区的复垦

### 9. Resource use at European level在欧洲的资源使用

9.1. Energy consumption能源的消耗

9.2. Renewable energy可再生能源的消耗

9.3. Fresh water use淡水的消耗

### 10. Emissions排放

10.1. Water effluent水排放

10.2. Climate gases emissions温室气体排放

10.3. Fluoride emissions氟化物的排放

10.4. BaP emissions BaP 排放

10.5. Bauxite residue deposited赤泥排放

10.6. SPL deposited电解槽内衬的排放

### 11. Product life cycle产品的寿命周期

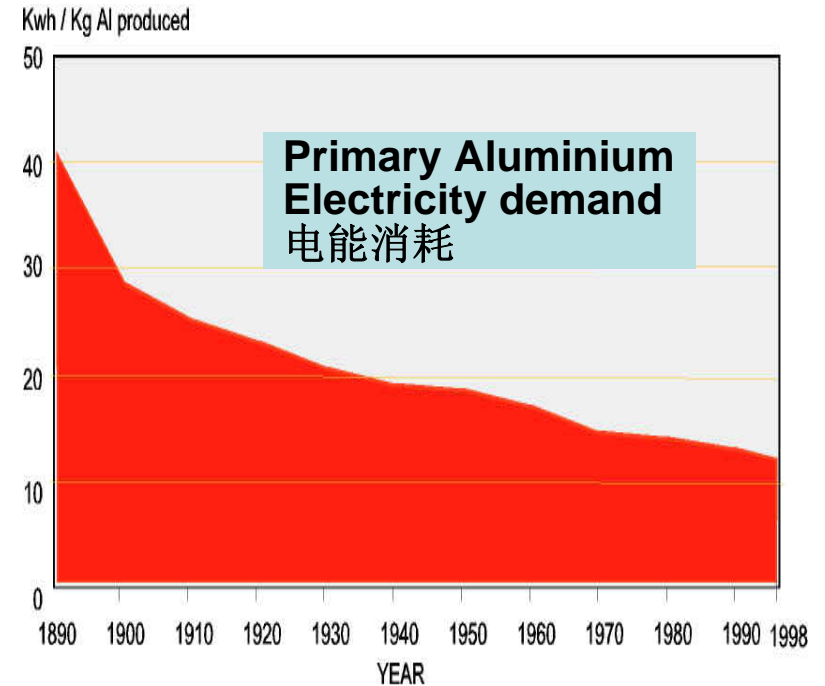
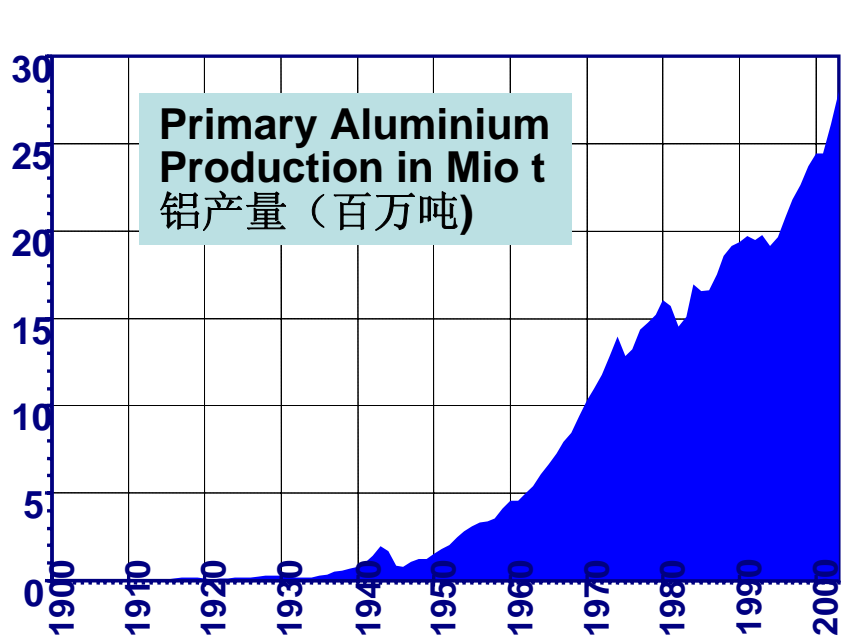
11.1. Use phase使用期

11.2. End of life phase寿命结束期

11.3. Life cycle aspects寿命周期



## Electricity demand (kWh) of a primary aluminium smelter per kg aluminium 电解铝厂电耗量/kg.Al



**Primary aluminium production continuously becomes more energy efficient**

电解铝生产将继续提高能源效率



## Sustainability and Integrated Business Systems: *EHS FIRST*

可持续发展力和综合管理业务体系: *EHS* (环境、健康和安全) 第一

A sustainable approach to business through **integrated business systems** that enhance the credibility of the enterprise through both and its performance and its products

可持续发展的方法是通过综合业务管理体系改善企业的效绩和产品从而提高企业的可信度。



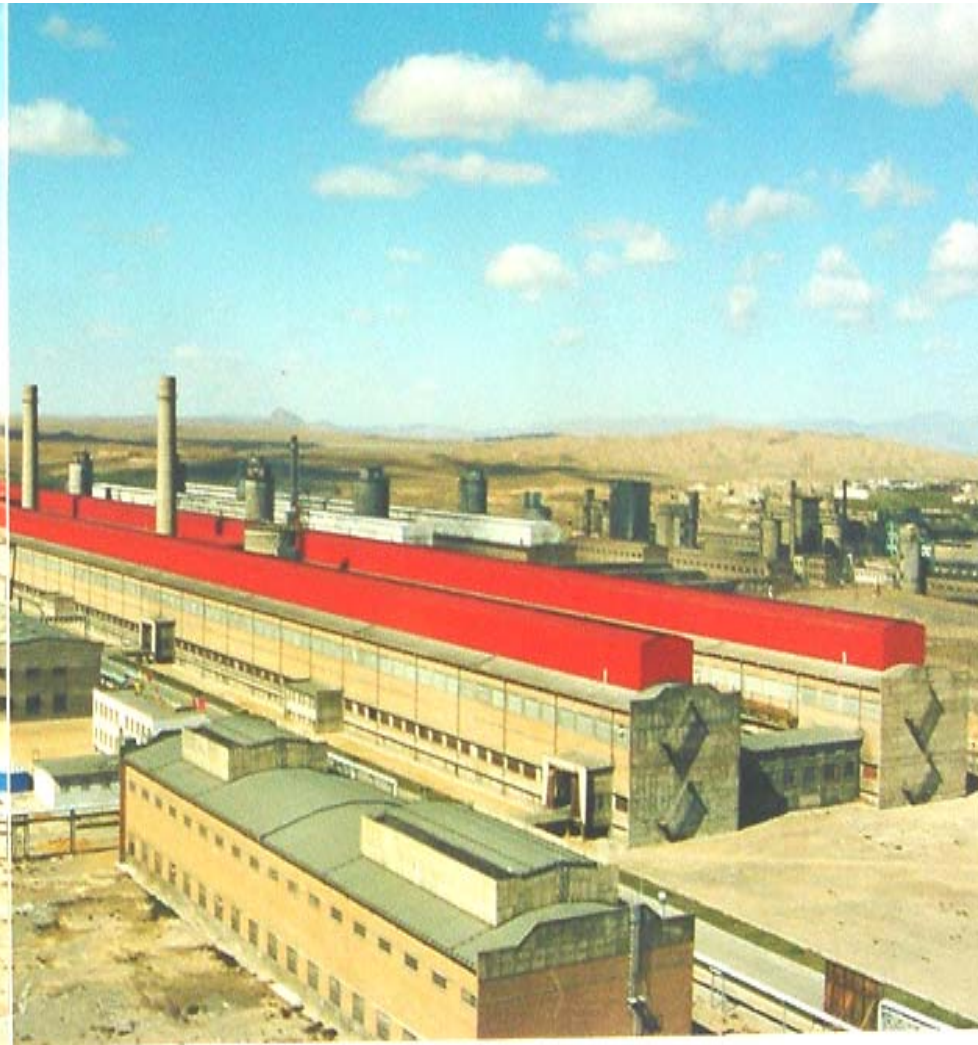
Alcan has implemented ***EHS FIRST***, as an integrated EHS management system that is part of Alcan's overall integrated business model加铝实施的***EHS 第一***,作为一种综合**EHS**管理体系，已经融为加铝整体综合业务管理模式的一部分





# Alcan In China—Alcan Ningxia Aluminum Company Limited

加铝在中国—加宁铝业有限公司







## What have we done so far in Ningxia China?

- Fostered EHS culture through various ways, crucially by “walking the talk” and aimed at employees embracing EHS and increasing their EHS ownership. 通过各种渠道，尤其“言行一致”来培育EHS文化和鼓励员工去拥护EHS，并增强EHS的主人翁意识。
- Intensive technical training aimed at implementing all Alcan EHS Standards. 进行了大量的技术培训指导工作指导实施EHS标准。
- Through employees significant involvement, EHS has permeated everything we do, even influencing daily habits like behavior in the traffic. 通过员工的有效参与，ESH已经开始渗透到我们生产和生活的任何地方，甚至影响日常习惯，例如交通行为。
- Educated employees and managers that EHS is the methodology for their thinking, decision-making, ways of communication, and cause-analysis and risk-controlling etc, to encourage them to be the believers and champions of EHS. 培训员工和管理层EHS是思考、决策、沟通和事故分析、风险控制的方法论，激励他们成为EHS的坚信者和拥护者。



## Lynemouth Power Station 电站

- 20 year old power plant / deregulated energy market / competitive challenges from rival power plants / price pressure on aluminum / pending constraints on emissions  
20 年的电站 / 市场化的能源市场 / 来自竞争对手的挑战 / 铝价压力 / 愈来愈严格的环境排放。
- Launches an internal continuous improvement program involving the workforce, revisits basic operating assumptions 推动内部的持续改进包括劳动力和重新审定基本操作参数。
  - improved thermal efficiency upgrading key equipment and effective use of process information
  - 更新关键设备和工艺数据的有效使用，改进热效率。
  - real time system costs were displayed to emphasize the financial implications of not being at optimum levels of performance
  - 用实际所消耗的成本来强调我们的财务状况并没有达到最好水平。
- Results: most thermally efficient coal-fired power station in UK, reduced coal consumption & reduced emissions, increased output, employee engagement, ROI (US\$24 M) in 4 years, air emissions at a record low, annual savings of US\$4 M
- 结果：英国的大多数燃煤电站，降低了煤消耗和排放，增加了产出，员工积极参与，ROI在过去的4年是2400万美元。空气排放物将至最低点，节约费用400万美元。



**Sustainability Dimensions: operational efficiency, reduced air emissions, employee engagement, addressing community concerns**

持续发展方向：操作有效性、减少空气排放、员工积极参与、强调社区的关注。



# Contaminated Water Treatment Systems

## 污染水处理系统

- Alcan R&D results in new systems to treat arsenic contaminated water in Bangladesh and India
- 加铝研究与发展中心在孟加拉国和印度研究出新的体系来对砷污染水进行处理。
- Introduced in 2000, over 3,000 units already in operation
- 2000年引进，超过3000个单位已经投入运作
- Potential to reach over 75 million people
- 有潜力影响超过7500万人



**Sustainability Dimensions: innovation, convergence between business opportunity and social / community need**

**SD方向：改革，集中在商业时机和社会/社区需要之间**



## Sustainability Services of Interest – I

### 可持续发展服务 – 要点I

- **Design approaches that take key issues into consideration, such as the Alcan's 8 areas of focus:**
- 设计能将加铝所关注的以下八个重要议题纳入考虑之列的方法
- **Energy Consumption - access, cost, mix**
- 能源消耗 – 使用、成本、能源综合利用比例
- **Climate Change - production performance, policies, allocations, cost**
- 趋势转变 – 生产表现、政策、资源分配、成本
- **Natural Resource Stewardship - conservation, access, cost**
- 天然资源管理 – 保护、使用、成本
- **Community Development - impacts, benefits, stakeholder engagement**
- 社区发展 – 影响、得益、利益相关方的参与
- **Well Being - H&S, work-life balance, community and consumer health**
- 福利 – 健康与安全、工作/生活的平衡、社区和消费者健康
- **Environmental Releases - emissions to air/land/water, compliance, remediation**
- 环境污染排放物 – 对空气/土地/水源排放、承诺、矫正
- **Innovation & Industry Shifts - consumer preferences, markets, technologies**
- 创意与工业环境更替 – 消费者取向、市场、科技
- **Product Stewardship - life cycle analysis, appropriate use, recovery**
- 产品管理 – 寿命周期分析、适当的运用、恢复



## Sustainability Services of Interest – II

### 可持续发展服务 – 要点II

- Project designs that integrate
  - 项目构思结合
    - life cycle thinking
    - 寿命周期概念
    - resource and product stewardship considerations
    - 资源与产品管理之考虑
    - total value opportunity and total cost of ownership concepts
    - 总体创值机会与总体成本概念
- Projects that demonstrate achievements in efficiency, pollution prevention, conservation, during **both** construction and in operation
- 项目在建设及营运中展示高效率、防止环境污染及减少资源浪费的成就
- Projects that add value by addressing stakeholder issues and concerns during design, construction and operation
- 项目在构思、建设及营运中通过考虑利益相关者的关注以达到增值



## Sustainability Services of Interest – III

### 可持续发展服务 – 要点III

- Projects that are cost effective
- 项目符合成本效益
- Projects that demonstrate adherence to Alcan requirements including:
- 项目能坚持加铝以下要求：
  - *EHS FIRST* (environment, health and safety)
  - EHS第一(环境、健康和安全)
  - Alcan's Worldwide Code of Employee and Business Conduct
  - 加铝全球员工及商业行为准则



## Connections between Alcan's Corporate Goals and Sustainability Services

### 加铝的企业目标与可持续发展服务之连系

- Alcan's governing objective is to maximize value
- 加铝的主导目标是将价值最大化
  - Projects need to demonstrate a breadth of value – tangible and intangible
  - 项目须展示广泛的价值 – 有形与无形
  - Value needs to be maximized for all stakeholders – shareholders, customers, the operation, employees, communities, and so on
  - 为所有利益相关者的价值最大化，包括股东、顾客、业务、员工、及社区等
- Value-Based Management
- 以价值为本的管理方式
  - Develop thorough fact bases for options
  - 发展完善的选项事实库
  - Rigorously and systematically evaluate options
  - 严谨并有系统地评估事项
  - Generate the widest possible set of options
  - 产生最广阔的可能选项组
- Excellence in all dimensions
- 做到面面俱佳
  - It's not only price and cost that matter, performance in EHS, on ethical matters, with contractors and suppliers, and over the life cycle of the project are all critical aspects
  - 除价钱与成本外，EHS方面的表现、合乎道德标准、与承包商及供应商之互动和监督整个项目寿命周期亦是不可缺少
- Cost savings and value creation
- 节省成本与创造价值
  - The design must be provide cost-benefit advantages in construction and implementation, and flexibility to adapt to evolving conditions and circumstances in the future
  - 构思须於建设与实行上提供成本效益的优势，并须俱弹性以适应未来发展中的条件与状况
  - For example, design to address increasing constraints on water availability and carbon emissions in a 5 to 10 year timeframe
  - 例如，构思须能在五至十年内解决日益严重水源问题及碳粒子排放



# Characteristics of a Sustainability Project

## 可持续发展项目的特点

### ■ Issues

#### ■ 重要议题

- Able to address a wider set of issues, that have more complexity, and do so in greater detail than may previously have been the case
- 比从前更全面和仔细解决更多及更复杂的事项

### ■ Stakeholders

#### ■ 利益相关者

- Able to identify, determine what is important for, and develop ways to work with, engage and partner in new and innovative ways with a wider set of stakeholders (including some non-traditional ones) than may previously have been the case
- 为更广阔的利益相关者层(包括非传统相关者) 发现及决定他们所需, 并发展更创新的合作渠道

### ■ Connections across disciplines

#### ■ 部门间之联系

- Able to make connections across the business, between different functions, and across disciplines to develop an open, comprehensive and multi-faceted view of the projects
- 通过跨部门、功能组别间的联系去为整个项目拓展一个公开、完善及多面的视点

### ■ Value

#### ■ 价值

- Able to identify, track and capture 'value' that is not simply financial (\$s) in nature, but includes value to various stakeholders and many forms of intangible value
- 发现、追寻及获取不单於金钱上, 还有益於不同利益相关者并包括许多无形的价值





## Alcan's Project Approach

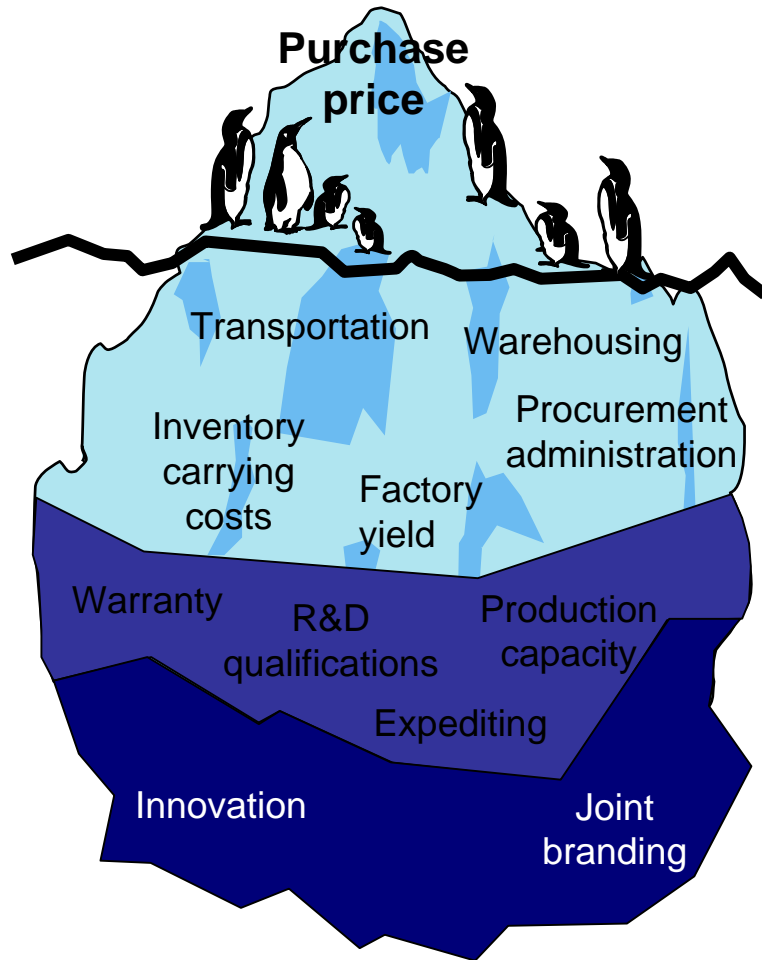
### 加铝的项目设计取向

- Integrating consideration of a wider range of issues (environmental impacts, energy costs and efficiency, safety, ergonomics, etc.)
- 结合对环境的影响、能源成本与效率、安全及人类工程学等更多不同事项的考虑
- Devoting more time to concept development, project definition and preparation, and consideration of alternatives
- 将更多时间投放於概念发展、项目界定与准备及可替代品的考虑
- Emphasize the importance of environment, health and safety considerations and attention to Alcan's Worldwide Code of Employee and Business Conduct
- 强调EHS(环境、健康和安全) 的重要性和加铝全球员工及商业行为准则



# Alcan's 'Total Value Opportunity'© - Sustainability and Procurement

## 加铝的总体机会价值 - 可持续发展与采购



### The 'Total Value Opportunity'©

总体创值机会

- Links procurement and sustainability
- 连结采购与可持续发展
- Helps minimize the global risk
- 有利于将整体风险降到最低
- Works to ensure that all involved get the best value out of the supplier relationship
- 保障参与者能从与供应商的关系中取得最佳价值
- Helps protect and improve Alcan's reputation and brand image
- 有利维护及改进加铝的商誉及品牌形象
- Builds long term partnerships
- 建立长远合作关系



## The Market for sustainability-oriented engineering

### 可持续发展市场 - 工程项目服务

- Develop and integrate a sustainability-oriented approach / sustainability mindset for engineering personnel and activities as well as for their clients
- 为工程人员、活动及顾客发展和整合一套以可持续发展为本的方法/心态
  - Provide ways to measure business value and benefits of a sustainability-oriented approach
  - 提供量度由可持续发展计划带来的商业价值与好处的方法
- Address long term aspects of projects, in addition to any short term cost savings as a core feature in project conceptualization and design
- 在项目的概念化过程与设计中，除短期的成本节省外，制定长远方向更是核心
  - Embed consideration of life cycle, resource and product stewardship aspects in project design and implementation
  - 将寿命周期、资源及产品管理等元素融入项目设计与实行中
  - ‘Engineer out’ waste and emissions by applying clean production and life cycle cost analysis as opposed to designing end-of-pipe solutions  
相对” 排放污染物” 的解决方案，运用清洁生产及寿命周期分析以停止废物及粒子排放
- Determine project success using an approach that is more balanced, to ensure that total value is considered and where possible, measured.
- 用更平衡的方法去审视项目的成效藉此确保总体机会价值已被考虑及尽可能量度
  - Look at the full ‘value chain’ associated with projects, from material and service supply to in-use performance to end-of-life requirements
  - 价值链: 物料和服务供应 → 在用表现 → 物料在寿命结束後的处理

