xstrata

Sustainability Report 2010

About Xstrata

Mission statement

We will grow and manage a diversified portfolio of metals and mining businesses with the single aim of delivering industry leading returns for our shareholders.

We can achieve this only through genuine partnerships with employees, customers, shareholders, local communities and other stakeholders, which are based on integrity, co-operation, transparency and mutual value-creation.

Who we are

Xstrata is a global diversified mining group, listed on the London and Swiss Stock Exchanges, with its headquarters in Zug, Switzerland.

What we do

Our businesses maintain a meaningful position in seven major international commodity markets: copper, coking coal, thermal coal, ferrochrome, nickel, vanadium and zinc, with additional exposure to gold, cobalt, lead and silver. The Group also comprises a growing platinum group metals business, iron ore projects, recycling facilities and a suite of global technology products, many of which are industry leaders. Xstrata's operations and projects span 20 countries.

How we operate

We believe that operating to leading standards of health, safety and environmental performance, contributing to the development of sustainable communities and engaging with our stakeholders in two-way dialogue, regardless of our location, enhances our corporate reputation and is a source of competitive advantage. We balance social, environmental, ethical and economic considerations in how we manage our businesses.

How we create value

We create sustainable value for our shareholders by delivering transformational growth and by applying operational excellence to our portfolio.

Environment

We are committed to identifying, understanding and mitigating the environmental impacts of our activities

In this section

Marcelo Fabian Urquita Orevelo water monitoring at Collahuasi copper operation in Chile.

Environment

Xstrata's Sustainable Development (SD) Policy frames our commitment to identifying, understanding and mitigating the negative environmental impacts of our activities across our global operations. It also expresses our focus on identifying and seizing opportunities to help protect and improve the environment, for example, by regenerating degraded landscapes and creating protected areas for biodiversity-rich habitats that exist on the land that we own or lease.

By their very nature, mining activities impact the natural environment. We believe that much can be done to mitigate these impacts and ensure that they are not long term or unsustainable. For example:

- With careful planning and management, and sufficient resources, mine areas can be rehabilitated and restored to an ecological status which is very similar to conditions before the mining activities started;
- Energy use can be further reduced per tonne of product and will be increasingly switched to low-carbon/renewable sources where available and cost-effective. With the right collaboration and government policy frameworks, cost-effective, innovative and safe solutions to capturing and storing or sequestrating CO_2 emissions from burning coal and smelting metals can be developed and implemented;
- Air emissions such as SO_2 from metal smelting operations can be reduced to levels that do not significantly affect air quality or contribute to acid rain;
- Mineral (rock) wastes and closed mines can be managed in ways that prevent acid rock drainage occurring; and
- Net water consumption can be reduced to levels that are equitable and sustainable where water resources are scarce and need to be shared fairly with other users such as farmers and local communities.

At the core of our environmental management approach is preserving and restoring the natural environments throughout the life cycle of mining activities.

The material environmental risks and opportunities associated with our operations and business are summarised in the table on page 60 along with our main actions and programmes to address these.

Monitoring plant growth at Rolleston coal operation in Queensland, Australia.

Principal environmental opportunities and risks from our operations

Material risk or opportunity	Management objectives, priorities and actions
Energy and associated greenhouse gas (GHG) emissions	Making mining and metallurgical operations more energy-efficient
	Reducing direct GHG emissions including fugitive methane emissions from our coal mining activities
	Sourcing reliable and affordable energy
	Contributing to the development of low emissions technologies to reduce significantly carbon emissions from coal as an energy source
	Assessing and managing the potential physical impact of climate change on our operations and projects
Use of scarce natural resources, in particular water	Reducing our reliance on fresh water through process design innovations
	Managing water sources in water-scarce regions in conjunction with communities and other industries
	Minimising harmful discharges to water and impacts on the quality of local water sources
Impacts on biodiversity and landscape functions (eco-services) as a result of changes in land use	Minimising the impacts on natural ecosystems, including avoiding any net loss of any IUCN Red List species
	Conserving biodiversity via offsetting and protecting suitable areas to compensate for disturbance where appropriate
	Conserving biodiversity within our managed operations by minimising land areas disturbed where possible, relocating flora and fauna, and rehabilitating disturbed areas using local endemic species
	Rehabilitating sites progressively and once operations cease; managing closed sites responsibly
Air emissions	Improving extraction and refining processes to reduce SOx, heavy metal and particulate emissions to air
	Installing and maintaining appropriate emission control equipment
	Monitoring ambient air quality
Generation and storage of waste and tailings management	Ensuring secure and leading practice tailings and waste rock management
	Reducing waste and the toxicity of our waste material
	Minimising harmful emissions to air, water and land
Potential impacts on human health and the environment throughout the life cycle of our products	Working with customers, governments and the scientific community to reduce polluting emissions (including GHGs) from burning coal
	Promoting the safe and environmentally responsible use, storage, transportation and disposal of our products
	Working with stakeholders and industry partners to test/verify the potential toxicity or impacts of our products
	Working with stakeholders to develop technologies to improve metals recovery, recycling and reuse

Management and strategy

Xstrata utilises an enterprise-wide framework for environmental risk and performance management that spans all areas and phases of operation. Whilst each commodity business tailors its approach to environmental management to fit with its broader operational and business management processes, this is done in a manner that remains consistent with the commitments and specifications of our Group-wide SD and risk management frameworks.

For further detail, see Strategy and governance section, page 16, of this report or visit our website at www.xstrata.com

Our core environmental strategy is to:

- Comprehensively and consistently identify, analyse, evaluate and regularly revisit our material environmental risks and opportunities;
- Assess and address our environmental risks and opportunities in a holistic manner (systems thinking), recognising that there are often close links between different SD issues (for example water, community and climate change) and other operational areas;
- Integrate our environmental (and broader SD) strategy and planning processes within our overall business and operational strategy and planning processes and set priorities, objectives and targets accordingly;
- Focus on ensuring a close alignment between material environmental risks and opportunities and the performance and management aspects we measure, track, report on internally and externally and verify;
- Ensure a learning culture through which we continuously review and implement improved systems and processes for addressing our environmental risks and performance;
- Aim at clear and strong leadership and accountability in our line management for environmental performance, supported by staff with the necessary skills and experience; and
- Make the necessary resources – both financial and human – available to achieve our environmental risk and performance objectives.

Within this overarching strategic approach, our environmental risks and opportunities are reviewed annually as an integral part of our business strategy and planning process. This sets the strategic focus, priorities and resource commitments at the Group, commodity business, division and site level for the coming year. This encompasses all stages of Xstrata's operations, from early exploration activities to site closure and maintenance.

As with our other areas of SD risk and performance management (safety, communities, health and occupational hygiene, etc.), we have put considerable effort and attention towards integrating the identification, analysis, evaluation and treatment of environmental risks into our enterprise-wide risk management framework and processes. The latter are guided by our Group Risk Management Policy. As a result, Xstrata's environmental risks are captured and integrated into our site, division, commodity business and Group-level risk registers. This has driven a number of important management efficiency improvements. Perhaps most importantly, this approach ensures that the whole management team is involved in the analysis and treatment of environmental risks and performance rather than just environmental specialists.

Management accountability is central to our approach and is, in part, enacted through regular audits of environmental risks. Chief executives from each of the commodity businesses regularly present on initiatives to address their material environmental risks to Xstrata's Board Health, Safety, Environment and Community (HSEC) Committee.

Xstrata's SD assurance programme requires independent site audits every three years that include assessment of both environmental management systems and risks. Xstrata brings in specialised experts to audit certain areas of environmental risk including closed sites, tailings dams, air emissions and water quality. The findings from these audits are an important input to the annual SD improvement plans for each site, which are tracked and reviewed by the respective commodity business executive teams. The SD assurance programme aligns strongly with ISO14001 and the ICMM Sustainable Development Principles.

Across the organisation we train employees on risk management and environmental awareness. Additionally, Xstrata stresses the importance of conducting site specific environmental compliance and system audits to identify improvement opportunities. To support this commitment focus, we regularly consult external environmental specialists and fund research. For example, in 2010, Xstrata Technology supported researchers at the University of Queensland, Australia, who successfully tested a rehabilitation technology for metal-contaminated mine sites. The new technology will promote plant growth at sites previously unable to support any vegetation due to soil contamination.

For a description of other Xstrata Technology work, see page 71.

Incidents and compliance

We strive for zero environmental incidents at Xstrata operations, eliciting no environmental fines, penalties or prosecutions. We monitor, report, investigate and remediate any incidents that do occur and apply lessons learnt to prevent similar events in the future.

We have developed an internal rating scale for incidents according to their severity (see table below). On a monthly basis, the Executive Committee and Board HSEC Committee review any category 3 (moderate), 4 (serious) and 5 (disastrous) incidents. To date, no Xstrata-managed operation or project has ever experienced a category 4 or 5 incident, and in 2010 we achieved zero category 3 incidents.

Environment *continued*

Sites are also required to report any environmental High Potential Risk Incidents (HPRI), including near-misses, that could have resulted in a category 4 or 5 incident, even when the actual impact was less significant. These are examined by the Executive Committees on a monthly basis at both the commodity business and Group levels (see further details under the safety discussion on page 42). Our HPRI reporting and evaluation process provides an opportunity for us to learn and improve risk identification and control, and management processes. We expect our sites to review and, as appropriate, amend environmental procedures and guidelines following the root cause analysis of HPRIs.

Xstrata incident categories

Category 1	Negligible	Causes negligible, reversible environmental impact, requiring very minor or no remediation
Category 2	Minor	Causes minor, reversible environmental impact, requiring minor remediation
Category 3	Moderate	Causes moderate, reversible environmental impact with short-term effect, requiring moderate remediation
Category 4	Serious	Causes serious environmental impact, with medium-term effect, requiring significant remediation
Category 5	Disastrous	Causes disastrous environmental impact, with long-term effect, requiring major remediation

While the number of category 3 incidents has steadily dropped over recent years, there has been a significant increase in the number of category 1 incidents (i.e., negligible impact), which we believe reflects an increasing culture of reporting incidents including near-misses across our operations. Such a heightened awareness on the part of our managers and employees reflects a greater level of understanding of environmental risks among our workforce and provides us with useful information and insights that can help us identify and reduce risks and prevent the occurrence of more serious incidents.

Group	2006	2007*	2008*	2009*	**2010**
Category 1	888	1,104	1,605	1,851	**2,187**
Category 2	228	264	241	199	**170**
Category 3	24	11	8	3	**0**
Category 4	0	0	0	0	**0**
Category 5	0	0	0	0	**0**
Total of Category 1-3	1,140	1,379	1,854	2,053	**2,357**

* Indicates restated figure.

Environmental fines

In 2010 we incurred four environmental fines, totaling $131,509. This represents an improvement over 2009, during which we incurred six environmental fines totaling $760,573.

Environmental fines in 2010

Date	Commodity business	Location	Description
March 2010	Xstrata Coal	Rolleston mine, Australia	Fine: AUD2,000 ($1,842) Issued for: Discharging water with suspended solids higher than permit
June 2010	Xstrata Copper	Kidd Metallurgical, Canada	Fine: CAD31,255 ($30,339) Issued for: Leakage of 450kg of R-22 Freon from the liquid sulphur dioxide plant to the atmosphere
September 2010	Xstrata Copper	Ernest Henry mine, Australia	Fine: AUD100,000 ($92,081) Issued for: Discharging contaminated storm water into a nearby creek following heavy rainfall
December 2010 (incident occurred in March 2010)	Xstrata Copper	Horne smelter, Canada	Fine: CAD7,465 ($7,247) Issued for: Sulphuric acid leak (75-115 litres) from an acid railcar

Climate change and energy

Our operations give rise to significant GHG emissions, both directly and indirectly, as well as themselves being exposed to the potential impacts of climate change resulting from such emissions.

We are committed to minimising GHG emissions and improving energy efficiency, as stipulated in our SD Policy and reflected in the reduction targets that we set ourselves (see performance targets on pages 108 and 109). As a growing global, diversified mining company that employs energy intensive metal smelting and refining processes and produces significant volumes of thermal and coking coal, we recognise both the magnitude and importance of this challenge for us.

One of the most significant sources of direct GHG emissions from our operations occurs when methane trapped in coal seams is released by mining. Methane is a very potent GHG (with 21 times more global warming potential than CO_2). We also create GHG emissions from our smelting processes and from our energy use – both directly (diesel used in our haul trucks and fossil fuel combustion in on-site power plants) or indirectly (electricity supplied to us from third party utilities operating coal, gas or oil fired power stations). In the case of coal, our customers release CO_2 when they burn coal to produce energy or steel.

Climate change also poses material physical and financial risks to our business. Our objective is to carefully assess and account for these risks as appropriate in our strategic and operational planning within the context of wider community and environmental impacts.

Physical risks: The potential physical impacts of climate change could materially impact Xstrata's operations in a number of ways including damage and business interruption due to flooding, extreme storm events, reduced water availability and health impacts in local populations due to the spread of contagious diseases such as malaria. A number of Xstrata's operations are located in arid areas, where further prolonged drought conditions could limit production growth, or constrain existing operations in more extreme cases. These include operations in some areas of South Africa, Australia and north Chile. Xstrata Nickel's Raglan operation in the Canadian Arctic is also exposed to the effects of climate change. Raglan's tailings management system relies on permafrost and may be adversely impacted by warmer average temperatures.

Financial risks: Xstrata operates in a number of jurisdictions in which regulations or laws to limit GHG emissions have been introduced or are being considered. While the future impact of the Kyoto Protocol and related legislation or regulation is difficult to quantify at the moment, one likely development will be for national, or regional collections of national, governments to restrict industrial emissions by imposing a cost of carbon on GHG emissions either directly through carbon taxes or indirectly through emission trading schemes. This, in turn, will feed through to increased costs for fossil fuels, electricity and transportation as well as increased operational costs related to GHG emission monitoring, reporting and accounting.

Higher energy costs or restricted energy supplies may have an adverse impact on our ability to maintain production and/or contain operating costs. Xstrata is the world's largest producer of export thermal coal as well as a major exporter of coking coal. If climate change policies lead to a reduction in the use of coal as a source of energy around the globe, this could have a significant impact on our business and financial position.

There is thus a complex interplay between these issues and such operational risks as business continuity, health and safety, environmental degradation, as well as non-operational aspects such as regulation, and we are constantly tracking, evaluating, engaging and adjusting to the situation accordingly.

Climate change strategy and management

Xstrata's climate change objectives are to be as energy-efficient as possible to minimise our GHG emissions, and to increase the share of energy we use, directly or indirectly, that comes from renewable or low-carbon sources. In reducing energy use and switching to more stable, local renewable and low-carbon sources, where available and cost effective, we also aim to improve the security of energy supply. In order to achieve these objectives, we set targets and we build climate change risk into our enterprise risk management and business strategy and planning processes.

The keys elements of our energy and climate strategy are as follows:

Energy and GHG emission data: in order to better understand our carbon footprint and identify opportunities for improvement, we will continue to improve the resolution and consistency of our data relating to GHG emissions and energy use;

Breakthrough technologies and innovation: innovate and develop more energy-efficient mining, concentrating, smelting and refining processes, both through our own research and development programmes including by our proprietary business Xstrata Technology services (see page 71), as well as through collaboration with research bodies, other mining companies and governments. Whilst much of the focus is on developing safe, commercially competitive carbon capture and storage (CCS) and sequestration technology for power plants that burn coal, it also includes technologies that utilise partially combusted flue gases for cogeneration of energy or converting flue gas emissions from smelters and on-site power plants to biofuels via algae production or solar reactor systems;

Ongoing energy efficiency improvements: identify, implement and share programmes between our sites, divisions and commodity businesses that significantly advance energy efficiency improvements at our existing operations;

Environment *continued*

Measuring humidity readings at Xstrata Nickel's Raglan operation in Canada.

Fugitive methane emissions: focus on finding ways to further reduce fugitive methane emissions from our coal mining activities. This includes pre-drainage and capture for use in generating electricity;

Switching to low-carbon energy sources: look for opportunities to switch to, or increase the percentage of, commercially competitive lower-carbon energy for existing operations. This includes finding opportunities to increase the proportion of purchased electricity coming from alternative energy sources in order to reduce our Scope 2 emissions;

Metals as part of the solution: working with other relevant stakeholders to understand where and how different metals and minerals can and are playing a critical role in helping society to switch to a low-carbon economy and implement programmes to help accelerate the adoption of these low-carbon solutions; for instance, copper in high-efficiency electric motors and platinum as a catalyser for lower-energy chemical production processes;

Land use: as custodian of large tracts of land, develop and implement programmes that minimize GHG emissions associated with the land use practices in these areas and seek opportunities to use the land to develop significant carbon sinks (e.g., increased forest cover, enhancement of wetlands, etc.);

Low-carbon energy locations: to carefully consider the location of future energy intensive metal smelters and refineries in locations that have commercially competitive low-carbon energy sources (e.g. hydropower) in sufficient quantities;

Climate change risks and adaptation: to work with others within the sector as well as other stakeholders to understand and take action to minimise the potential impacts of climate change in areas that are likely to be most affected and where we can have most effect; and develop an improved awareness and preparedness for the risks associated with climate change, especially in terms of their potential impact on our operations and logistics (see Physical risks of climate change on page 63);

Engagement and communication: to work with other stakeholders to help develop effective and robust climate change policies at the international and national levels;

Scope 3 emissions: reduce indirect (Scope 3) GHG emissions from product transport and business travel; and

Product footprints: identify opportunities to reduce the life-cycle carbon footprints of our products.

All of our commodity businesses have developed climate change strategies integrated into their business strategies and plans, which are updated annually and address:

- Energy use and GHG emission reductions including specific reduction targets;
- The physical risks that climate change presents to the commodity businesses' operations; and
- The political and commercial risks and opportunities associated with climate change policy and regulatory developments.

The commodity businesses regularly review and seek ways to improve their approach to managing climate change risks and performance. For example, during 2010, Xstrata Nickel developed and implemented a Climate Change Management Framework that is supported by a number of specific guidance documents and includes a Carbon Tool for tracking and forecasting the scale and impact of climate change regulations and associated risks on financial and operating performance.

The commodity business climate change strategies are reviewed annually by the Group Executive Committee as part of our strategic review and budget sessions to ensure consistency and alignment and to maximise synergies where we have operations from two or more commodity businesses located in a particular country or region.

Engagement

We aim to participate constructively and actively in the global debate on climate change and policies to address this significant challenge. Our policy engagement approach is to promote the following principles and objectives:

- **Clear price signal:** ensuring that carbon price signals reach consumers such that carbon consumption is reduced, and investment choices made that favour low-carbon alternatives;
- **Revenue neutral:** returning aggregate revenues raised to individuals and businesses impacted by the carbon price;
- **Trade competitiveness:** returning emission costs for trade exposed products (imports and exports) during the transition to a global system to maintain international competitiveness;
- **Broad based:** covering the broadest possible range of both carbon emission activities and low-carbon energy options in any plan;
- **Predictable and measured:** ensuring that future carbon costs are predictable and measured to facilitate investment and give the economy time to adjust;
- **Simple and effective:** including mechanisms, singly or in combination, that are easy to implement and effective at reducing carbon; and
- **Technology development:** encouraging availability of low emissions technologies through a market led approach that is based on sound long-run economic analysis.

Xstrata engages in climate change policy development on many fronts both at a national and international level. Our Chief Executive Officer, Mick Davis, is chairing the ICMM Council Working Group on Climate Change Policy which is helping to develop ICMM's programme action to meet its climate change policy commitments. Peter Freyberg, chief executive of Xstrata Coal, is currently chair of the Climate Change Committee at the World Coal Association. At a more technical level, our experts have been providing substantial input to the carbon capture and storage (CCS) discussions via the Australian government delegation and participated in meetings with the Australian Climate Change Minister.

Several of the countries where we operate have already introduced regulations or laws aimed at the reduction of GHG emissions. Others, including Canada and South Africa, are in the process of approving new legislation to introduce regulation or a price on carbon emissions. Xstrata Coal has had ongoing consultations with the Australian Government on low-emission technology policies and related climate change matters. We have been encouraging a pragmatic, phased approach to the introduction of a carbon price or an alternative market-based mechanism.

Greenhouse gas emissions performance

GHG emissions are measured as CO_2 equivalent tonnes (tCO_2e). Xstrata's main sources of Scope 1 and 2 GHGs are from electricity used, from methane released during our coal mining in some regions and from post mining fugitive methane emissions from our closed coal operations.

Fact box:
Greenhouse gas (GHG) emissions

Scope 1 emissions	Direct GHG emissions (from sources that are owned or controlled by Xstrata)	Methane and CO_2 from decayed organic matter released during coal mining
		Fuel, such as diesel and oil, used on site
		Emissions from the use of reductants, such as anthracite and carbon, in ferrochrome smelting
		On-site waste disposal
Scope 2 emissions	Indirect GHG emissions from purchased electricity	Electricity generated by others that we use to run our operations
Scope 3 emissions	Other indirect GHG emissions (from sources not owned or controlled by Xstrata)	Combustion of coal produced by Xstrata by our customers
		Transport of materials and consumables to our operations
		Transport of our products from Xstrata sites to customers
		Waste sent to off-site landfill

Environment *continued*

Our total Scope 1 and Scope 2 emissions of GHG during 2010 amounted to 24.7 million tonnes CO_2e. Representing an increase of 12% (2.7 million tonnes CO_2e) compared with 2009, much of this was driven by an increase in production levels across our operations as they responded to increased demand in the wake of the recovery from the global financial crisis. Xstrata Alloys operations accounted for the major share of our increased GHG emissions as aggregate production rose by 48%, leading to a 41% increase in GHG emissions.

In 2010, we emitted 1.48 tonnes of CFC 11 equivalents, 0.18 tonnes less than the 2009 restated figure.

Our Scope 3 emissions in 2010 totalled 220 million tonnes of CO_2e. The table below provides a more detailed breakdown, by commodity business unit and sub-category of our carbon footprint.

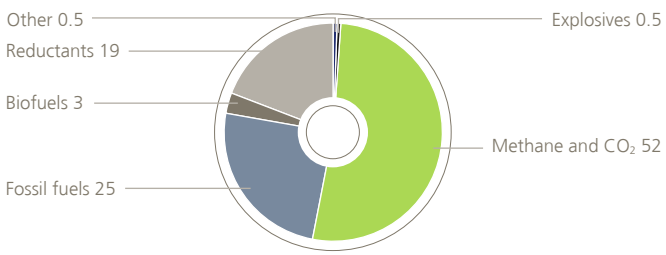
Carbon dioxide equivalents

(tonnes)	Alloys	Coal	Copper	Nickel	Zinc	**Group**
Scope 1 emissions						
Methane and CO_2	–	7,703,838	–	–	–	**7,703,838**
Fossil fuels	315,529	1,034,160	967,027	749,388	488,604	**3,554,708**
Biofuels	398,631	–	555	–	167	**399,352**
Reductants	2,489,550	–	29,613	–	145,087	**2,664,250**
Other sources	–	6,002	20,727	29,069	10,515	**66,313**
Explosives	2,376	22,487	6,766	379	2,310	**34,318**
Total scope 1 emissions	3,206,086	8,766,487	1,024,688	778,837	646,683	**14,422,780**
Scope 2 emissions						
Electricity	5,642,501	1,198,881	1,716,193	148,413	1,565,108	**10,271,095**
Total scope 2 emissions	5,642,501	1,198,881	1,716,193	148,413	1,565,108	**10,271,095**
Scope 3 emissions						
Other	709	157,189	8,905	5,772	1,870	**174,445**
Waste	3,240	13,772	3,087	3,271	2,112	**25,481**
Coal combusted by our customers	–	190,770,039	–	–	–	**190,770,039**
Transport of goods on land	4,135,530	1,530,828	9,226,249	1,026,946	3,250,040	**19,169,594**
Transport of product to customer (by ship)	206,395	9,334,792	72,994	16,176	201,958	**9,832,314**
Total Scope 3 emissions	4,345,874	201,806,620	9,311,234	1,052,164	3,455,981	**219,971,873**
Total Scope 1, Scope 2 and Scope 3 emissions	**13,194,461**	**211,771,987**	**12,052,115**	**1,979,414**	**5,667,771**	**244,665,748**

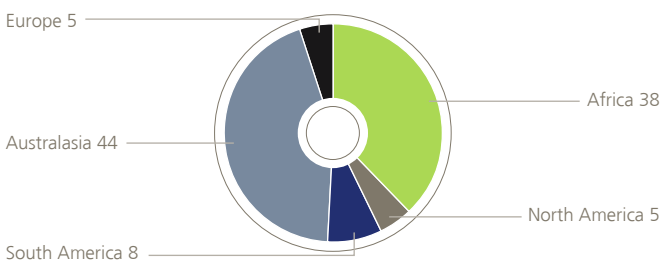
Changes in GHG emissions over time are driven by the evolving characteristics of our operations, for example the amount of methane gas present in our active coal seams, the depth and age of mines, energy efficiency and the extent to which low-carbon sources of energy can be used cost effectively. Our sites set individual targets for reducing GHG emissions per tonne of production (see further discussion related to energy efficiency, page 70).

We continue to improve our GHG emissions monitoring and data management systems. This applies to data for 2010 as well as our historical performance. As our businesses review their emissions data and compare it to baseline levels, we continue to identify small revisions to our previously reported performance data, and we institute improved data collection and management methods as a result.

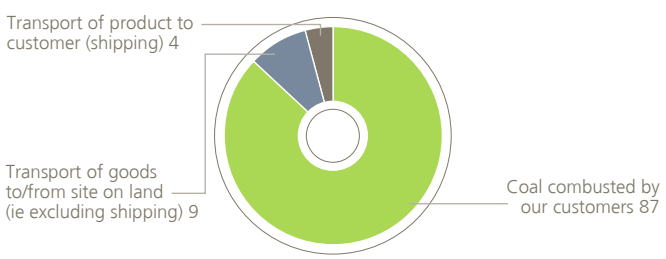
Scope 1 emissions by source (2010)
(%)



Scope 1 and 2 emissions by region (2010)
(%)



Scope 3 emissions by source (2010)
(%)



Methane capture and use

Our largest source of Scope 1 (direct) GHG emissions is fugitive methane, accounting for 52% of our total in 2010. Methane has always been controlled in coal mining operations, as it represents a significant explosive and fire hazard. Historically, this has involved pre-draining underground mines of methane and venting it directly to the atmosphere. However, whilst this approach addresses the safety risks associated with methane gas in coal mines, it does nothing to address its contribution to climate change risks. As a result, we are utilising methane arising from our operations to generate energy, where feasible, or, as a minimum, converting the methane to CO_2 by flaring it to reduce its global warming potential.

Currently, we have three methane-fired power stations, operated by Envirogen at Oaky Creek, Tahmoor and the recently closed Teralba Mine in Australia. The power stations have a combined capacity of 31MW and all electricity generated is sent directly to the grid.

In 2010, nearly AUD12 million was committed to installing a 9MW power plant with flares at the Bulga South Blakefield site in Australia. The plant is scheduled to be operational in late 2011. Improved gas monitoring as part of this project has also identified the potential for further growth of energy generation at the site. Detailed analysis of the viability of the optimal size for increased energy production will be undertaken throughout 2011.

During 2010, we continued to roll out our Marginal Abatement Cost Curve (MACC) tool across the Xstrata Coal business with a view to incorporating it into the annual business planning process. This helps our operations to assess both the environmental impact and cost effectiveness of different GHG emission mitigation options and prioritise their investments accordingly.

Reducing emissions from the use of coal

Xstrata is the largest exporter of thermal coal in the world, meeting approximately 1.5% of global demand. Coal is an abundant, reliable and relatively low-cost energy source and, as such, we believe it has a critical role to play in ensuring energy security and economic growth over the coming decades. As a source of energy, it is a vital part of the global energy mix, representing around a quarter of overall demand, and around 60% of proven reserves. It is anticipated (IEA statistics) that the rapid growth of emerging markets, particularly Brazil, India, Russia and China, will increase the proportion of coal in the overall energy mix to 30% by 2030.

Coal is an especially important energy resource for countries that lack any significant oil and gas reserves and would otherwise be dependent on imports from other countries. We believe that, in addition to coal, all sources of energy will be required to satisfy the world's growing energy needs, including other fossil fuels, renewables and nuclear.

At the same time, we also fully recognise that the current and predicted levels of GHG emissions associated with the burning of fossil fuels (of which coal is most polluting in terms of GHG emissions per btu produced) under a business-as-usual scenario are unsustainable and need to be addressed with considerable urgency and innovation.

Environment *continued*

Significant effort and resources need to be committed by both industry and governments to rapidly find ways of capturing and treating or storing the carbon emissions associated with fossil fuel sources. With the right types of government policy, stakeholder collaboration, and research and development, we believe that safe, cost-competitive solutions can be found and implemented on a broad scale.

In 2010, combustion of the coal produced by our customers accounted for approximately 190 million tonnes of CO_2e, or eight times the Scope 1 and Scope 2 emissions generated by our operations. The transportation of coal from our ports to our customers accounted for approximately 9.8 million tonnes of CO_2e.

With this level of emissions, we recognise that we have an obligation to support the development of technologies that will reduce the overall emissions associated with the extraction, transport and use of the coal we produce. We support the research, development and commercialisation of low-carbon emission technologies that will reduce the impacts associated with our customers' use of the coal we produce, in partnership with other coal producers, governments, and scientific and academic organisations.

Emissions reductions from the use of thermal coal are necessary and achievable by:

- Improving combustion processes to increase the amount of useful energy obtained from a given quantity of fuel (known as thermal efficiency); and
- Deploying CO_2 capture and storage (CCS) – including mineral sequestration (e.g. to magnesite) – technologies that reduce the GHG emissions of coal-fired power generation.

CCS technology involves the capture of CO_2 emissions from the coal combustion process in a power plant, this stream of carbon dioxide is then compressed and transported to a storage site where it is then safely injected deep underground into saline aquifers or depleted oil and gas reservoirs for permanent storage or sequestrated as a mineral (e.g. magnesite).

Several advanced low-emission technologies are in various stages of development worldwide. To date, progress has been slow – partly due to the capital costs involved in setting up pilot plants and partly due to political impediments. Technology development will continue to be somewhat hindered until there is a clear price signal for carbon.

Conveyor belt at Xstrata Coal's Collinsville operation in Queensland, Australia.

Whilst the research and development costs associated with the leading CCS and sequestration technologies are high, we believe these will be reduced significantly over time as experience is gained in deploying technologies on a commercial scale and economies of scale are realised. We believe that the additional medium- to long-term cost increases created by applying CCS solutions to coal-fired power stations will still allow coal to be one of the most competitively priced sources of energy.

Significant government and industry support and funding is required to realise the G8 countries' target of 20 CCS plants in operation by 2020. Xstrata Coal is contributing to this goal by investing nearly $200 million in low-emission technologies, through industry initiatives and independent investment.

Global Carbon Capture and Storage Institute
Xstrata Coal is a Foundation Member of the Global CCS Institute, launched in April 2009 with support from industry and the Australian government. The Institute will:

- Bring together international knowledge and expertise to create a focal point for CCS initiatives worldwide;
- Help to coordinate the development and delivery of safe, economically viable and sustainable commercial-scale CCS projects; and
- Provide advice on technologies for CO_2 capture, transport and storage, as well as the costs and benefits of CCS and the implication of regulations and legislation.

The Global CCS Institute's Project Funding and Support Programme will provide approximately AUD50 million annually for direct support of large-scale CCS projects around the world, assisting them to move through the critical stages of project development towards operation. In 2010, the Institute identified 234 active or planned CCS projects over a range of technologies and project types. Of these, 77 are large scale integrated projects of which eight are operating and a further four are in the execution stage. The Gorgon Carbon Dioxide Injection project and the Southern Company IGCC Project in the USA were implemented in 2009 and 2010 respectively.

COAL21 Fund
Xstrata participates in the COAL21 Fund, an industry initiative that imposes a voluntary levy per tonne produced by the Australian coal industry. Its aim is to raise nearly AUD1 billion to support the demonstration of low emissions technologies in Australia. Xstrata Coal expects to contribute over AUD180 million to the fund over 10 years. Through the COAL21 Fund we are helping to support a number of initiatives including:

- The Callide Oxyfuel project (also subject to independent funding by Xstrata);
- Gasification combined-cycle feasibility and implementation projects in Queensland;
- A post-combustion capture demonstration project in New South Wales; and
- A national low-emission coal research body in collaboration with Commonwealth and State governments.

Over and above our voluntary contributions to a broad range of projects through the COAL21 Fund, Xstrata independently contributes additional funding and support to the following initiatives:

Callide Oxyfuel project
Xstrata Coal has made an AUD1 million commitment to the Callide Oxyfuel project, in addition to our support through the COAL21 Fund. The project aims to demonstrate oxyfiring, which enables coal to be burned in a mixture of oxygen and recirculated flue gases, to produce a highly concentrated stream of CO_2 that is suitable for geological storage. The technology could be retrofitted to existing power generation plants, or incorporated into new-build plants.

Work on the demonstration Oxyfuel plant continued in 2010, with commissioning due in early to mid 2011 when the project will begin a trial injection of GHG over a two-year period.

CO_2CRC and Otway Basin project
We contribute nearly $200,000 annually to the Co-operative Research Centre for Greenhouse Gas Technologies (CO_2CRC). Participants in the Centre include Australian and international companies, universities, research bodies and government agencies. To date, research funding is secured until 2015.

Our support helps fund initiatives such as the CO_2CRC's flagship Otway Basin project in southwest Victoria, Australia, one of the largest geosequestration demonstration projects in the world and the first in Australia. Launched in 2008, the project has already injected 60,000 tonnes of CO_2 into a depleted gas well and a programme of atmospheric, geochemical and geophysical monitoring and verification has been implemented to confirm the effectiveness and safety of the site for CO_2 storage. A new well was drilled in early 2010 and a new injection phase will be initiated in 2011.

FutureGen
Xstrata Coal has committed up to AUD25 million over four years to the FutureGen project, a public-private partnership to design, build and operate the world's first coal-fuelled, near-zero emissions CCS plant in the US. The 275MW plant was originally intended to prove the feasibility of producing electricity and hydrogen from coal while capturing and permanently storing one million tonnes per year of CO_2 underground.

The FutureGen research goals have been revised during 2010. The FutureGen alliance is advancing implementation of FutureGen 2.0, a regional CO_2 storage site that could accept CO_2 from a variety of industrial sources for safe, permanent storage.

The initial CO_2 to be stored at the hub will originate from a power plant in Meredosia, Illinois. This power plant will be upgraded with advanced oxy-combustion technology that will allow the capture of its CO_2, which will then be transported to the storage site.

Wandoan Power Project

Xstrata Coal is one of the few coal companies investing directly into CCS projects, notably the Wandoan Power Project in the Surat Basin in Australia, which has been shortlisted by the Australian government as a CCS flagship project. Xstrata Coal has formed a 100% owned subsidiary, Carbon Transport and Storage Corporation (CTSCo) Pty Ltd that draws together a team of industry experts to develop a robust work programme for proving the feasibility of commercial scale storage in the Surat Basin as part of the Wandoan Power Project. The goals for CTSCo are:

- To determine the viability of up to 75 million tonnes of CO_2 storage in the Surat Basin;
- Link to a large scale demonstration capture project; and
- To assess suitability of the Surat Basin as a potential CCS Hub in Australia based on the preliminary work of the Queensland Geological Survey CO_2 Storage Atlas and the National CCS Taskforce Report.

Energy use, efficiency and security

Energy use is a significant component of our total operating costs. Across the Group, energy costs represent approximately 10% of overall operating costs, but for some of our more energy-intensive sites (e.g. smelters) the proportion can be 25% or more. Therefore, our commodity businesses have long had a sharp focus on reducing energy use and improving the energy efficiencies of their operations. Our Technology Services team works closely with each of our commodity businesses to research and develop smelting and refining process breakthroughs that significantly reduce energy use and improve productivity.

A secure supply of energy is key to our continued growth, however, many factors beyond our organisation scope influence this, including increased demand by other users, problems with local generation and transmission of power, and political, regulatory and economic uncertainties. We are constrained by the locations of our operations, many of which are located in remote areas, making a connection to a reliable energy supply challenging. In some regions we depend on one major or national power generation company, for example, Eskom in South Africa. In others, like parts of South America, our security of supply depends on decisions of energy provisions made by other neighbouring countries. Managing risks associated with energy security is a priority for Xstrata. Mitigation methods include improving energy efficiency, negotiating long-term contracts with energy providers and diversifying our power sources.

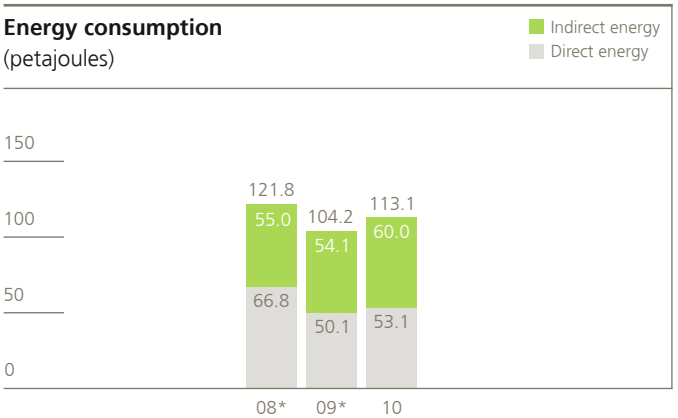
To ensure continuous improvement with regard to energy efficiency, all our commodity businesses have energy efficiency plans in place and undergo regular energy audits. For example, Xstrata Coal's Energy Efficiency Programme for 2010 included site workshops and training during August and September 2010 and internal reviews of several site-level energy efficiency programmes between September and December 2010. We try to influence this best practice with our contractors, by encouraging them to purchase more efficient equipment and replace worn machinery and vehicles. When starting a new operation or exploration project, we implement energy efficiency programmes from day one and factor energy sourcing and efficiency considerations into the mine or smelter design plans.

Energy performance

Energy use is measured in petajoules and includes both electricity usage and energy from the combustion of fuel. We measure efficiency as energy intensity – the amount of energy required to produce one tonne of product. Over half of the energy we use comes from electricity – of which about 22% is from renewable sources, primarily hydroelectric – and is predominantly used to run our metallurgical, dragline and loading operations. Diesel is the primary source of energy at our mines and is used to run the mining fleet and other mobile equipment.

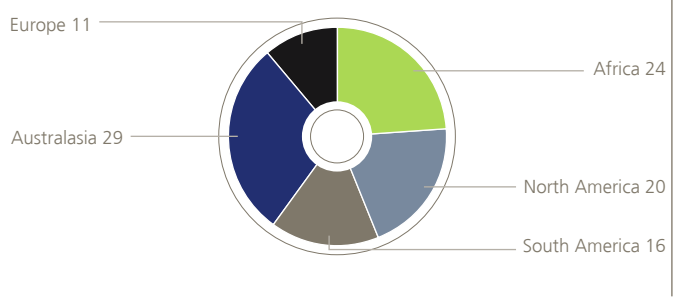
During 2010, our energy use increased by 8.6%, equivalent to 9 petajoules. Of this increase, 83% was accounted for by the 48% production ramp up at the smelter operations of Xstrata Alloys after the slowdown in 2008-09. Total energy use increased modestly at Xstrata Coal, Xstrata Nickel and Xstrata Zinc operations, and decreased at our Xstrata Copper operations, mainly due to the closure of the Kidd Met smelting operation in Canada.

Energy consumption
(petajoules)

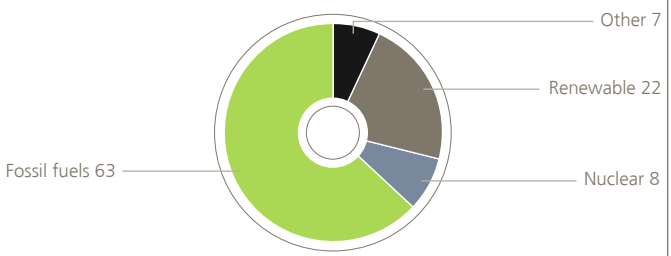


* Indicates restated figure.

Energy consumption by region (2010)
(%)



Electricity purchased by source (2010)
(%)



Alternative energy

In 2010, 22% of purchased electricity was generated from renewable energy sources, principally hydroelectric power. Diversifying our energy sources beyond fossil fuels also helps us ensure security of supply for operations in many regions.

Some examples of initiatives taken by Xstrata sites during 2010 to increase the proportion of energy used by our operations from renewable sources include:

Sudbury operations, Canada: Work continued on the Sudbury smelter Syngas project that will result in the production of a synthesis gas (Syngas) from biomass that will reduce the use of natural gas at the Calciner smelter and/or be used to generate electricity for use on-site or for sale into the electricity grid, depending on market conditions.

Raglan, Canada: Xstrata Nickel's Raglan mine continues the Scoping Study for Wind Energy at Raglan. New wind measurement instruments were installed at Deception Bay, Katinniq and Kikialik in the last quarter of 2010. The wind assessment study is continuing in 2011. At least nine months of good data are required for the wind turbine size selection. The best sites for wind turbines will be determined by the third quarter of 2011.

Lomas Bayas, Chile: Management at Xstrata Copper's Lomas Bayas copper mine commenced a tender process for the installation of a 15kW pilot photovoltaic plant that has been supported technically by the Antofagasta University. The plant will be connected to the Lomas Bayas' internal electricity network and commissioned in the second half of 2011. We have also installed nine units of solar panels at the new mine camp with a total capacity of 26kW. This will provide 70% of the hot water needed by the camp, which will begin operations at the end of 2011 and provide accommodation for 912 people.

Xstrata Copper, Chile: We installed 18 solar panels at a new modular school we funded in Chile's Maule Region, following the devastating earthquake in February 2010. These panels will provide 3,600 litres of hot water and reduce gas consumption.

Thorncliffe chrome mine, South Africa: The installation of a wind turbine at a ventilation fan allows for energy to be harnessed from the air that is dispelled from underground operations. Energy generated from the turbine amounts to 25,920kWh per year.

Alumbrera mine, Argentina: Xstrata Copper installed solar-powered beacon lights to replace lit diesel oil containers previously used to mark access roads during adverse weather conditions. With about 200 lights installed by 2010, the site is now saving 18,000 litres of diesel oil on every adverse weather day and avoiding the associated GHG emissions.

Mount Isa Mines, Australia: We have installed 155kW of solar photovoltaic generating capacity to supply electricity needs for the Xstrata Parkside accommodation complex, which provides housing for employees and contractors. The solar panels provide renewable electricity supply to the apartments and export power to the local electricity grid at times when the apartments are not occupied. The cost of installation was nearly AUD950,000 and the panels will reduce the need for purchased electricity, saving an average of 500 kilograms per day in greenhouse gas emissions. The project is designed to demonstrate the effectiveness of solar technology to communities in North West Queensland, thereby encouraging the use of renewable energy as an alternative to fossil fuels.

Xstrata Technology Services

Xstrata Technology Services provides proprietary technologies and specialist services in the areas of mining, mineral processing and metals extraction to major mining companies worldwide and to Xstrata's own operations to improve efficiency.

Xstrata Technology

Mineral and metal processing plants (especially the grinding process) are major energy consumers, and therefore energy efficiency has become an important objective in Xstrata Technology's work to improve processing and extraction technologies. We have developed a range of technology and process improvement approaches around the grinding process. For example, at Xstrata Nickel's Strathcona Mill, a project to optimise the grinding process resulted in energy efficiency increases of 7.1% and 7.5% in the rod and ball mills respectively.

Our IsaMill™ technology is another example of where significant energy reductions have been achieved in the grinding process, in this case through the introduction of new technology. The IsaMill technology is able to utilise more power per unit volume than ball and tower mills, in fact, overall it reduces the energy cost, media cost and capital cost of grinding.

Xstrata Process Support

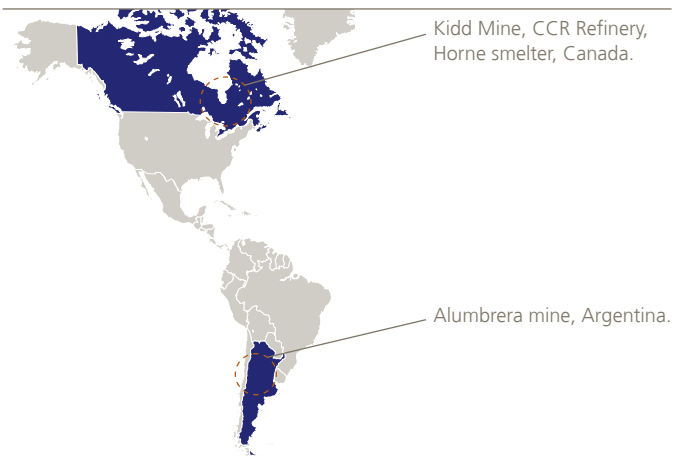
This group has worked on numerous process improvement projects for Xstrata operations and those of many other mining companies around the world. These result in GHG emission reductions, improved energy efficiency, and improved plant safety and reliability. For instance, in 2010, we completed a review of the Xstrata Nickel custom feed kiln operation in Sudbury, Ontario. By following a back-to-basics approach and updating the temperature control strategy, we helped the site achieve a more consistent and steady operation and reduce natural gas consumption.

Xstrata Copper:
Improving energy efficiency

Many mining activities and most metal smelting processes require the intensive use of energy. Xstrata Copper undertook several projects in 2010 to reduce energy consumption and promote employee awareness of energy conservation opportunities, both at work and at home.

- At Kidd mine in Northern Ontario, Canada, one of the challenges faced by this exceptionally deep mine, is that the deeper we mine, the greater our energy requirements become. This has the potential to offset efficiency improvements made in other areas. Despite this challenge, energy use decreased 52,735GJ or 4.3% in 2010 compared to the previous year and GHG emissions were lowered by 3.9% or 3,120 tonnes. These reductions were achieved through a variety of projects, which included: automation and reduced use of auxiliary fans and exhaust fans; minimised leakage from the compressed air line system by decommissioning lines in unused levels; and decommissioning of an electrical substation on an unused mining level. The ventilation system improvements alone, which allow the auxiliary and exhaust fans to be shut down for a period of up to four and a half hours a day during the two shift changes, have saved an estimated 13.3 million KWh of electricity a year, equating to more than CAD1 million in electrical costs.
- In Canada, employees at the Horne smelter mobilised to participate in Défi Climat (Climate Challenge), a regional campaign to encourage energy efficiency in daily life. Between March and April 2010, 193 employees committed to personal carbon reduction initiatives and participated in weekly activities, workshops and challenges organised by an internal employee committee. Weekly Friday challenges addressed a large range of energy issues, including zero waste lunches, biking or walking to work, turning off vehicle engines, supporting a meatless day and purchasing local foods.
- The CCR refinery in Canada has fully implemented operating changes to its top blown rotary converter (TBRC). The TBRC operation staff discovered that they could reduce the flow rate of natural gas to the unit and operate it at a lower temperature without compromising the metallurgical performance of the system. During 2010, this operating change avoided the use of more than 3,200GJ of natural gas and prevented the emission of 164 tonnes of CO_2e. The lower temperature had a secondary benefit of extending the life of the converter refractory lining by 60% and increasing the number of charges from an average of 32 to 52 before it needs to be rebuilt.
- At the Alumbrera mine in Argentina, the 793 model haul trucks were upgraded to a more recent engine model with better fuel efficiency. The upgraded engines use about 8% less fuel, and because they require less frequent maintenance, used oil generation is also reduced by about 280,000 litres annually. Xstrata Copper owns a 50% share in the joint venture Alumbrera operation and is responsible for overall mine management.

Repairing mine haul trucks at the Alumbrera copper operation in Argentina.



Water

We aim to be as efficient as possible in water use and avoid any negative impacts on water quality in the environments in which we operate. Mining and metal smelting and refining activities can require large amounts of water depending on the specific operational details of each site. Also, since water availability varies considerably between the regions where our sites and projects are located, we approach water management on a catchment level, with additional strategies, programmes and measures in place in water-scarce locations.

Our sites and commodity businesses work on a regional basis with local communities, authorities, agricultural and other industry users to develop and implement water management plans that ensure the sustainable and equitable access and proper management of water resources between all the stakeholders in the catchment area.

A key consideration when planning the expansion or construction of a particular operation is water availability and quality of intake and discharged water. We undertake Environmental Impact Assessments as a tool to advise our decision-making and planning in this area. We also use the results to ensure minimal impact on local water resources during the different development phases of these projects.

It should be noted that reporting of water usage metrics is an evolving area. The Global Reporting Initiative introduced new definitions in its G3 guidelines, released in 2006, and the Carbon Disclosure Project has published a water use disclosure survey that has placed further demands on companies seeking to be transparent about this important sustainability aspect. Like our peers in the mining industry and other industrial sectors, we continue to refine our water-related data measurement parameters and associated collection processes to meet evolving management and reporting needs.

Water availability and use

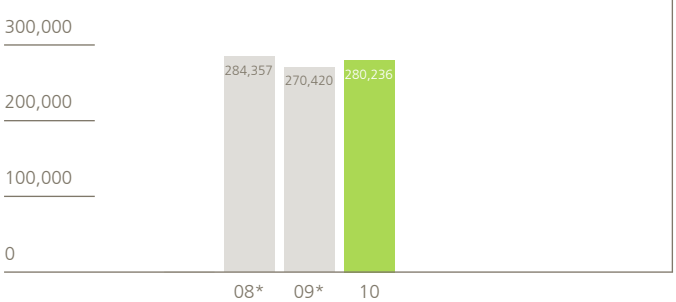
Across our sites and commodity businesses, operational demands for water can vary significantly. Certain metallurgical processes – concentrating, cooling, refining and transporting metals as slurry – are water intensive processes. Annual water use correlates closely with commodity production volumes and product demand.

Many of our sites are located in arid regions across Australia, Argentina, Chile and South Africa, where variability of rainfall, snowmelt, etc, can lead to periods of drought. We require those sites that are designated as water scarce to implement water conservation plans, set water intensity targets and execute water efficiency measures. We develop these plans in collaboration with local communities and other stakeholders and according to the site's specific operational and environmental context.

In 2010, Xstrata's Executive Committee endorsed the UN Global Compact's CEO Water Mandate, a unique public-private initiative designed to assist companies in the development, implementation and disclosure of water sustainability policies and practices.

We are progressively increasing the amount of water we recycle and reuse. Water is recycled through processing plants while a common end-use for this reused water is dust suppression. Capturing stormwater provides an important alternative water source that helps us further reduce our reliance on fresh water drawn from local surface water, or groundwater resources.

Total water withdrawal
(megalitres)

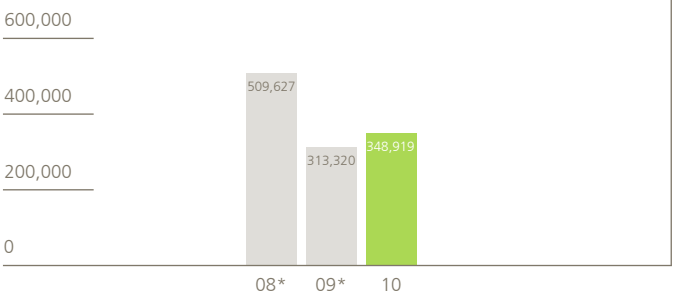


* Indicates restated figure.

In 2010, our total water withdrawal, including withdrawals for cooling water purposes, increased by 4% to 280,236 from 270,420 megalitres in 2009. This was partly driven by increased production across most of our operations but also reflects a water accounting adjustment that we made in 2010 whereby changes were made to the reporting definitions to include dirty water from on-site dewatering activities in the water consumption ledger. Of the total water withdrawn in 2010, 131,097 megalitres was sourced from surface fresh water, ground water and potable water resources, which represents a decrease of 1% over 2009 withdrawals from these resources. No water source is significantly affected by an Xstrata operation withdrawing water.

We increased our use of recycled water to 348,919 megalitres, an 11% improvement over 2009 (restated). This was despite the removal of dirty water used for site dewatering activities from the recycled water category. There were significant water recycling projects initiated during 2010 at the Xstrata Copper Alumbrera complex in Argentina and a cooling water recirculation project at Xstrata Nickel Falcondo in the Dominican Republic.

Recycled/reused water
(megalitres)



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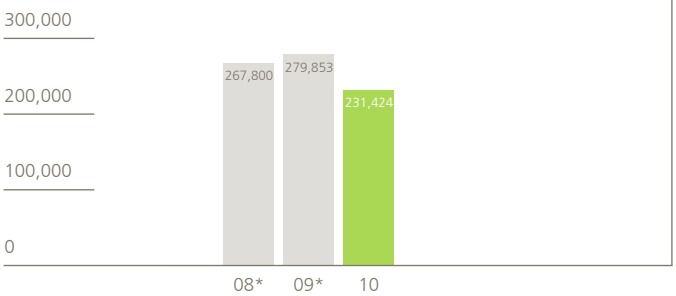
Total discharged water
(megalitres)



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Water quality

Careful monitoring of water quality – both of our discharges as well as of the receiving bodies such as rivers and estuaries – helps us be sure that the quality of water effluents after treatment when they are discharged off-site will not impact local water quality and the natural environment.

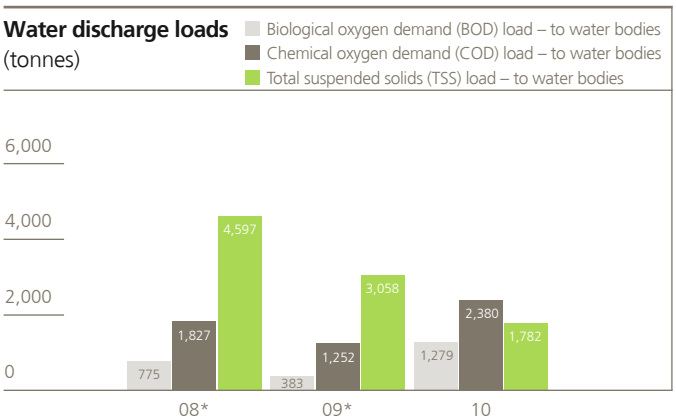
We discharged 231,424 megalitres of water to inland water courses in 2010, of which the major proportion came from our 21 closed sites in Canada.

Operations employ measures to remove harmful substances, such as suspended solids and heavy metals, and treat chemical imbalances such as acidity and alkalinity through wastewater treatment before it is released off-site. Impacts to local water quality can also occur from unexpectedly large stormwater and flooding events at some of our sites. Substantial investments in stormwater management have been made at several South African operations and at Mount Isa in Australia, which are particularly prone to these occurrences.

In addition, we are open to working collaboratively with other mining companies that have operations close to ours, where this makes sense. For example, in 2010, Xstrata Coal South Africa entered into a Memorandum of Understanding (MoU) with Anglo American plc to evaluate the viability of using an existing Anglo American water treatment plant to deal with effluents from mine expansions by both companies.

In Australia, Xstrata Coal participates in a cooperative effort that has helped restore the quality of the Hunter River, to the benefit of nearby farmers and the community as a whole. The Hunter River Salinity Trading Scheme is a market-based initiative controlling the level of salt discharged into the Hunter River by mines and power stations. Entities hold tradeable salinity credits allowing them to discharge set tonnages of salt under strict licence conditions. Every two years, 20% of the total salinity credits expire and must be repurchased through an auction. Under the Scheme, mines and power stations can only discharge surplus saline water during high river flows and low background salinity levels. A number of Xstrata Coal sites in New South Wales, Australia, including Bulga, Cumnock, Liddell, Ravensworth and United, take part in the scheme.

Water discharge loads
(tonnes)



* Indicates restated figure.

Xstrata Copper:
Reducing evaporative losses at Lomas Bayas

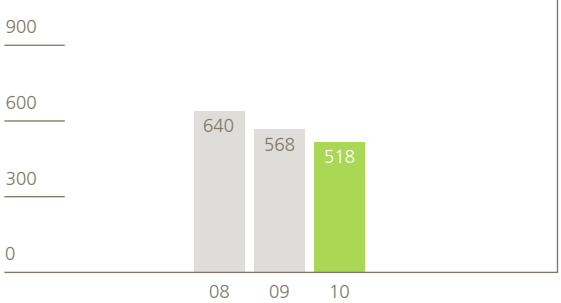
Xstrata's copper operations in Peru and Chile utilise a process called heap leaching, in which a mildly acidic solution is sprayed over crushed copper ore to leach out the mineral. This represents a significant use of water at these sites. Our operation at Lomas Bayas, Chile, is collaborating with local universities to design and implement measures to reduce evaporation in the heap leaching process, thereby reducing water use at our sites and helping to conserve water resources in this water-scarce area. We have worked with the local authorities to determine a sustainable and equitable level of water use, but our operations have now reached a point where water use is becoming a constraining factor. If we are to increase production, we need to find ways of doing this that do not increase our total water use.

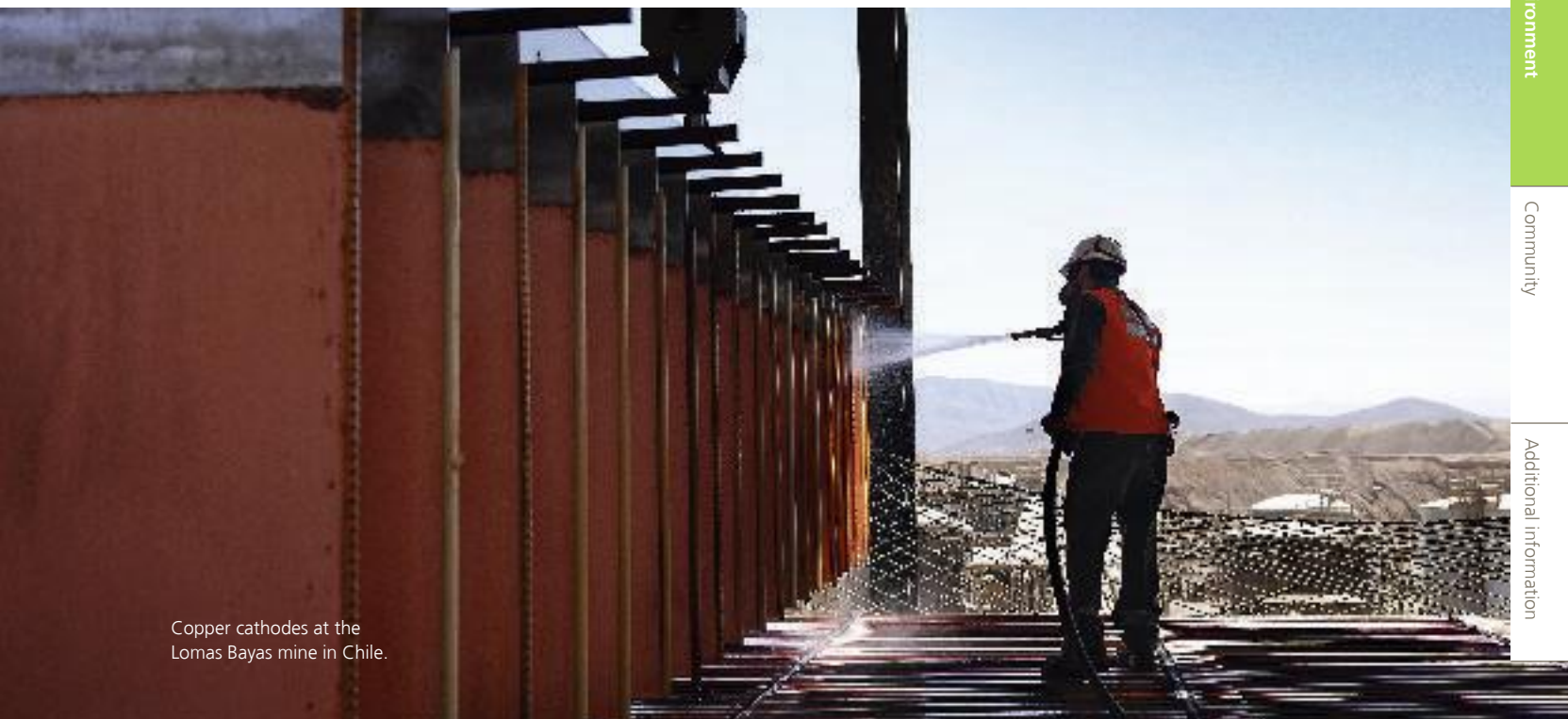
During 2009, we began replacing the existing sprinkler systems with more advanced drip irrigation systems that deliver the leaching solution into the ore concentrate heaps more accurately, uniformly and with much lower evaporative losses. In addition, during 2010 we began installing impermeable plastic covers over the irrigated areas. These steps reduced water use in the leaching process.

During 2011, we will begin installing floating covers on the ponds storing water and the leaching solution. Based on pilot tests conducted at the site, these measures are expected to improve the efficiency of water use by 15% to 20%.

This water initiative lays the groundwork for future growth at the Lomas Bayas site. The improvements have reduced water consumption per unit of ore mined and have thus enabled an increase in irrigated areas using the same amount of fresh water. The project will facilitate development at Lomas Bayas while still complying with Xstrata's and the local authority's water use standards and limits and without adding stress to vulnerable fresh water resources that the community depends upon. The first of its kind in the Antofagasta region of Chile, the project has received support from Chile's Economic Development Agency (CORFO).

Water used for leaching at Lomas Bayas, per unit of irrigated area
(litres/sq. metre)





Copper cathodes at the Lomas Bayas mine in Chile.

Biodiversity and land management

Xstrata has a large collective geographical footprint and some of our sites are located in biodiversity-rich areas with endemic and threatened species. In total, we own, lease or manage 902,065 hectares of land, of which 20,313 hectares are in biodiversity-rich areas.

Inherently, mining industry activities can affect local ecology, but we strive to avoid any impact on natural habitats, biodiversity and landscape functions like watershed and microclimate management. We are committed to avoiding the loss of any International Union for the Conservation of Nature (IUCN) Red List threatened species as a result of our operations.

Conservation plans

Biodiversity conservation plans are required at all Xstrata-managed operations to protect and, in many cases, enhance local ecology. Additionally, we are committed to properly rehabilitating and restoring the land both during the mine life as well as once the mining activities have ceased. Xstrata expects each operation to have (and regularly update) a plan that takes careful account of the local context including the proximity of any protected or high biodiversity value areas.

As a member of ICMM, we are committed to not mine or explore in World Heritage properties. While no Xstrata sites are located within protected areas, several sites are adjacent to protected areas, or within or adjacent to biodiversity-rich areas. In these situations, Xstrata engages with external stakeholders including local and national governments, communities, conservation organisations and universities to develop and implement biodiversity conservation programmes.

We utilise biodiversity baseline surveys as a tool to record the site's biodiversity and identify vulnerable species and ecosystems before operating in a new area, acquiring an operation or making major changes to existing operations. We follow up this step with an Environmental Impact Assessment that identifies other potential effects from proposed or existing operations, and design a corresponding conservation plan that covers all stages of the mine's development, operation, rehabilitation and post-closure. Throughout the life cycle of an operation we monitor local biodiversity conditions, making a concerted effort to identify and mitigate any potential impacts, and where these do happen, to restore the area as close as possible to its original condition.

Compensatory offsets

We look for opportunities to create biodiversity 'offset' reserves where we identify and protect from future disturbance or development, from mining operations or otherwise ecologically sensitive areas within our mining or exploration leases when we cannot restore local biodiversity or to compensate for impacts. By the end of 2010, we had established 9,109 hectares of protected biodiversity offsets.

At our McArthur River Mine, operated by Xstrata Zinc in the Northern Territory of Australia, staff have been working closely with external, internationally recognised biodiversity offset experts to develop a proposed plan for creating the Glyde River Preservation Zone that is in line with the draft Northern Territory Environmental Offsets policy issued in 2010. The conversion of McArthur River Mine to open pit mining necessitated the diversion of a 5.5km stretch of the 300km long McArthur River into a newly created channel.

The aim of the proposed offset project is to achieve a net gain in biodiversity by preserving and protecting the habitat and associated eco-systems of a neighbouring river, equally significant in terms of biodiversity. Covering an area of 10,000 hectares along the Glyde River, the area will be protected from further development as well as restored by preventing pastoral activities and seasonal fires. The annual costs – estimated at AUD250,000 per year – will be met by Xstrata Zinc for as long as it holds the mining lease, currently expected to be at least 35 years.

Rehabilitation

We consider the impact of our operations on local landscapes across the life cycle of a site, from initial exploration to decommissioning and closure. As of year end 2010, our footprint of disturbed land consisted of 57,704 hectares, and we had rehabilitated 16,138 hectares.

The baseline biodiversity and landscape function studies that we conduct at the feasibility or exploration phase of projects, or as soon as practicable for acquired operations that lack an appropriate baseline study, help us to address any topographic maintenance, runoff prevention and soil quality issues. In addition, environmental risk assessments associated with impacts on biodiversity and landscape functions are undertaken for new operations and for major changes to existing operations. These studies:

- Establish existing conditions of biodiversity and landscape function (e.g. watershed management, control of soil erosion and microclimate creation);
- Identify the potential impacts of proposed activities and operations that create risks to biodiversity and landscape functions;
- Identify relevant standards to be applied or used as benchmarks; and
- Identify opportunities for improvements.

The information acquired from the baseline and risk-related studies is used, in consultation with affected and concerned stakeholders, for the development and implementation of biodiversity and landscape function management systems and programmes as well as site closure plans. For example, our large-scale Koniambo nickel project is situated in tropical New Caledonia which experiences very high seasonal rainfall and cyclones. Over the past three years, massive earth moving work has been carried out including building a road onto the massif that will be mined, a port, preparing the site for the construction of the

smelter and associated power station, and the dredging of a shipping channel and ocean outfall. All these have been achieved with no significant environmental incidents or community complaints with respect to runoff, sediment control, soil quality and slope stability. During the planning and implementation of these activities, particular attention, in close collaboration with local communities, authorities and third party experts, was paid to:

- Sediment control structures and re-vegetation programmes in place for water and erosion control;
- Establishing and meeting stringent water management commitments; and
- Developing and implementing an effective management programme for the now completed dredging/marine works.

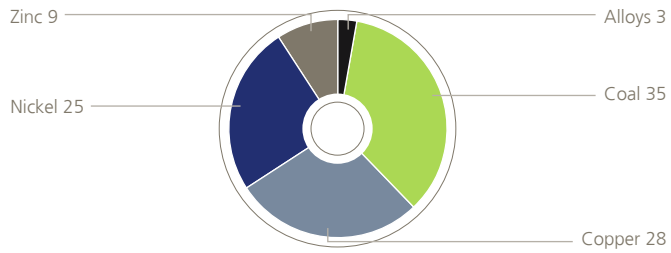
The ICMM mine closure toolkit is used to inform the development of site closure plans and the application of the requirements contained in the Xstrata SD Standards. All sites are required to develop, maintain and implement closure plans. This includes aspects such as topographic (aspect and slope) maintenance, run-off prevention and soil quality preservation. Annual reviews of these plans provide an opportunity for us to assess our closure and rehabilitation cost estimates, review environmental, social and legal circumstances, and identify potential commercial opportunities for reuse of the site. Working in close collaboration with other stakeholders such as local communities and authorities, Xstrata aims, through post-closure rehabilitation, to leave the site in a state that allows for residential or agricultural use, or a complete return to its natural pre-operational state.

We annually estimate the future costs of rehabilitating our sites over the life of the operation. In certain cases, we provide the government of a particular country with a bond (usually a bank guarantee) that would cover these costs. In 2010, this amounted to $2,229 million in provisions in our accounts and $91 million in the South Africa Trust Fund.

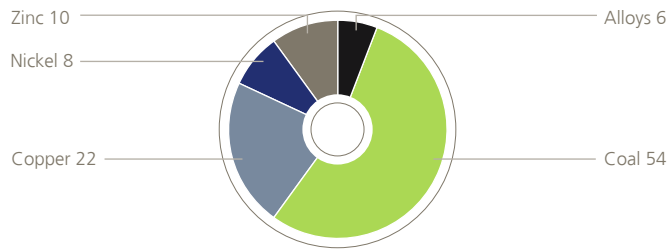
There are differences inherent in the way our mining operations conduct site rehabilitation. At open cut coal mines, the extent of disturbed land is typically larger than at a metallurgical mine, as the extraction moves from area to area within a land lease. Xstrata Coal operations progressively rehabilitate portions of the mined area that are no longer in use, as they continue mining in the next area.

Our metallurgical businesses, on the other hand, generally have a more contained area of disturbance that grows as the mine gets larger and deeper, but does not move around. Site rehabilitation generally consists of contouring and capping piles of overburden that have been removed from the mine void. The objective of rehabilitation efforts is to prevent acid rock drainage and match the original local ecosystems and topography. We also remediate historic contamination from previous activity at our sites, in partnership with local authorities and other companies.

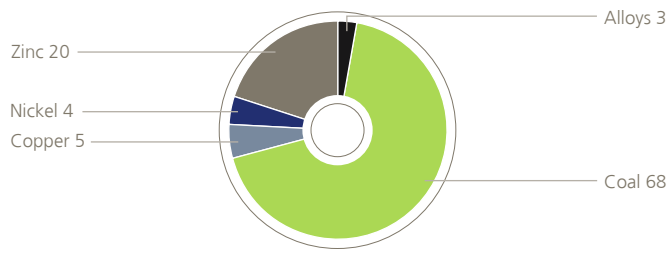
Land owned or leased by businesses (2010)
(%)



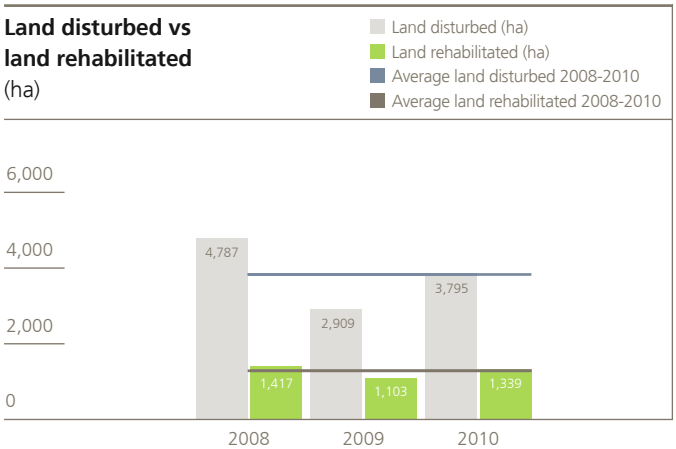
Land disturbed by businesses (2010)
(%)



Land rehabilitated by businesses (2010)
(%)



Land disturbed vs land rehabilitated
(ha)



Xstrata Nickel:
Preserving biodiversity in New Caledonia

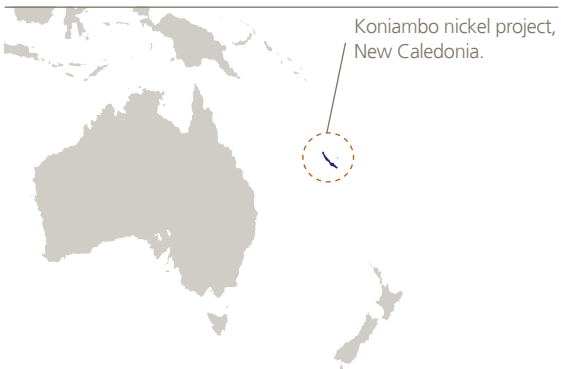
Koniambo Nickel SAS, a joint venture between Société Minière du Sud Pacific (SMSP) and Xstrata Nickel, is located in New Caledonia, an Australasian island that is widely recognised as a richly biodiverse locale. Some of the unique ecological aspects of this project area include the following:

- The natural lagoon that surrounds the large island of New Caledonia has been designated a UNESCO World Heritage Site;
- The region around the Koniambo Nickel site is rich in endemic species and sensitive habitats including rainforest, wetlands, mangroves, savannah and coral reefs that contain 115 IUCN Red List species of plants and animals;
- Conservation International, a global NGO, has identified New Caledonia as one of 34 biodiversity hotspots in the world; and
- The area comprises three watersheds that are important sources of water for the local communities.

Conserving the native plant and animal life in the area of the nickel mine under development at Koniambo is a critical element of the overall site plan and preparation.

Under Xstrata Nickel's leadership, the Koniambo Nickel team developed a biodiversity management plan that will guide the Company's development efforts as the project progresses. Some sensitive areas have been identified as off-limits and are protected by fencing, not to be disturbed by any mining or infrastructure development. The team is actually improving some of the local ecological resources, such as the endangered Jaffré forest, by removing invasive vegetation and replacing it with native plants selected specifically to enhance the woodlands' biodiversity. We maintain a plant nursery with representatives of endangered species that have been identified at the site. By replanting these endangered species, Koniambo Nickel is strengthening the native populations.

As road works are being constructed, rehabilitation crews are progressively restoring the temporary tracks with native species that are known to live in the area at that elevation. In addition, the SMSP-Xstrata Nickel joint-venture has committed to partnering with the Government to restore previously disturbed areas that were not a result of its activities. In advance of any land disturbance, Koniambo Nickel sends botanists out to survey the area and identify individual plants that should be preserved or transplanted. It is also replanting mangroves at the coast to replace those that were removed when we constructed port facilities to serve the project. These mangroves will play a critical role in protecting the shoreline, providing additional nursery habitat for fish and invertebrates and improving overall water quality.



Monitoring the replanting of protected species at Xstrata Nickel's Koniambo project in New Caledonia.

Emissions to air

Xstrata's mining and metal smelting and refining operations generate a number of emissions that have the potential to pollute the atmosphere and affect surrounding communities and eco-systems if not carefully controlled and mitigated. Those of most concern are particulate matter (dust, which in some instances is contaminated with heavy metals) and SO_2.

We are committed to measuring, controlling and reducing harmful emissions to air. This not only helps protect air quality and the environment, but it also helps us maintain good relationships with local communities, and thus protect our licence to operate. We abide by a number of different regulatory regimes to control air quality. Xstrata operations that generate air emissions have made significant improvements in reducing emissions to air since Xstrata acquired them, and have plans in place to further minimise and control emissions.

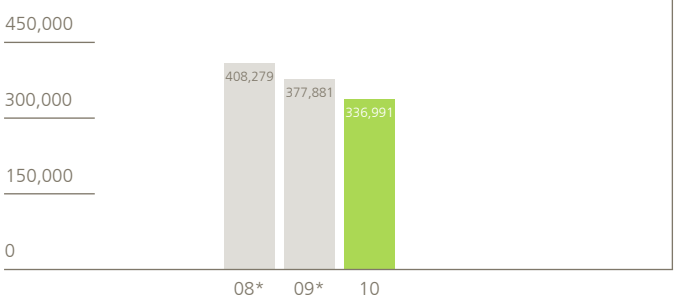
Xstrata Alloys is managing and funding the development of an air monitoring network in the Rustenburg area of South Africa. The monitoring network will integrate data from numerous stations into one. The purpose of the project is to assist the local municipality with air quality reporting under its Air Quality Management Plan, part of its public health management obligations. In addition, the air monitoring network will assist local industry with air quality impact assessments for new emissions licences, as well as Environmental Impact Assessments for future plant expansion.

We also emit small quantities of nitrous oxides (NOx), largely associated with the equipment and vehicles we use. We use modern equipment and vehicles which include technology designed to minimise our NOx emissions, which were 4,468 tonnes in 2010 versus 4,082 tonnes in 2009.

Sulphur dioxide

Our most significant emission to air, apart from GHG, is SO_2, which is produced by our metallurgical operations. We emitted 336,991 tonnes of sulphur oxides in 2010 which represents an 11% decrease from 2009 despite increases in production across most of our operations. (Note that sulphur oxides include small amounts of other combinations of sulphur and oxygen, but SO_2 is the vast majority of the total.) Our most significant source of SO_2 is Mount Isa Mines, a very large multi-installation site in northwest Queensland, Australia, comprising a copper and a lead smelter together with copper, zinc and lead mining operations. The Mount Isa Mines complex produced about two thirds of our total SO_2 emissions in 2010.

SOx – oxides of sulphur emissions
(tonnes)



* Indicates restated figure.

Operations that emit SO_2 have implemented both annual and longer-term targets to reduce their emissions and increase the proportion of emitted gas they capture. Activities include:

- At Mount Isa, Australia, our Copper and Zinc businesses are working together to assess the feasibility of increasing the capture of SO_2 from their smelters to 95% by 2012 for the copper smelter and 98% by 2012 for the lead smelter. The site also completed its review in 2010 of its SO_2 emissions forecasting and control systems, which identified a number of improvements that will be implemented during 2011;
- At Sudbury, Canada, Xstrata Nickel aims to reduce SO_2 emissions to less than 25,000 tonnes per year by 2015, as well as cutting particulate emissions to less than 250 tonnes per year – a 40% reduction on 2006 levels;
- The Altonorte smelter in Chile, has a public target to capture 95% of SO_2 emissions. This target was achieved in 2009. Results from ambient air quality monitoring of SO_2 show consistent levels for 2009 and 2010 performance. However, in 2010, the methodology used to calculate SO_2 capture rates was altered to bring it into alignment with methods commonly used in Chile. Using the new calculation method, the smelter reported a capture rate of 93.5% for 2010. A full year on year comparison of capture rates using consistent methodology will be available when the smelter's performance for 2011 is reported;
- Xstrata Zinc aims to maintain and improve the capture rates at its operations: San Juan de Nieva (99.75%); Nordenham (99.8%); Hinojedo (99.7%); CEZ (98.5%); and Brunswick smelter (92%);
- Xstrata Copper has already achieved its goal to capture over 95% of SO_2 at Horne and has maintained capture rates at or above these levels in 2010; and
- In addition to measures designed to decrease stack emissions, specific initiatives have been taken to address fugitive emissions released from process activities.

Environment *continued*

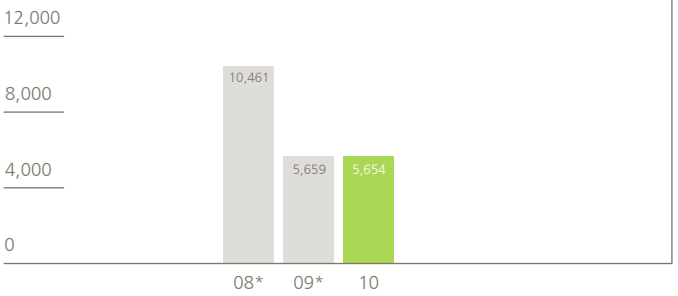
Dust and heavy metals

Our operations also emit dust – sometimes containing heavy metal particulates. As a result, we implement a broad range of initiatives at operations to minimise dust emissions, including particulate filtering and collection units within processing operations; regular spraying of mine roads, stockpiles and mining areas using predominantly recycled water; and the use of dust monitors to alert mine supervisors when dust levels are increasing.

During 2010, Xstrata Coal has responded to community concerns regarding dust emissions both at its South African operations and in the Hunter Valley in Australia. These are areas where ambient air quality is affected by a variety of local industrial activities and other mining companies in addition to the Xstrata mining and processing facilities. We are engaging with other industry members, government and community representatives to better understand the potential hazards and public health risks and how to reduce and, where possible, eliminate these. We are providing financial support for improved air quality monitoring networks in both regions. We have conducted extensive benchmarking exercises to learn from the experience of others, and we continue to implement a range of improvements to our own dust management processes, including dust suppression and operational controls.

Sylvain Pomerleau inspects the tailings dam at Xstrata Nickel's Raglan mine.

Particulate emissions
(tonnes)



* Indicates restated figure.

After achieving significant reductions in our total particulate emission between 2008 (restated) and 2009 (restated), our emission levels decreased only marginally in 2010. In fact, this shows a certain degree of decoupling between our production levels and particulate emission levels since production levels increased significantly for most of our operations during 2010.

Waste

Our mining and metallurgical operations generate significant amounts of non-hazardous wastes and some hazardous wastes. The bulk is mineral waste, generated by the mining of ore and coal, the processing of such and the smelting of metals.

The proper management and disposal or recycling of these wastes are necessary to avoid environmental impact. Xstrata aims to reduce both the quantity and toxicity of our waste, to find opportunities for environmentally sound recycling or reuse of our wastes and to continue to ensure our remaining wastes are managed and disposed of in a safe and environmentally responsible manner.

Waste management strategies and plans are a requirement at all Xstrata operations to reduce, reuse, recycle and properly dispose of waste. This diverts some of the waste sent to landfill and also reduces costs. These plans will vary significantly between sites, depending mainly on the type of mining or exploration activities as well as local opportunities to recycle or reuse some of the wastes. Coal mines, metallurgical mines and smelters produce particular waste streams that must be dealt with in specific ways.

In 2010, our operations generated 1.13 billion tonnes of waste:

- **Mineral waste:** 1.12 billion tonnes; and
- **Non-mineral waste:** 240,000 tonnes.

The total mineral waste volume is comprised of:

- **Waste rock:** 1,064 million tonnes;
- **Rejects:** 31 million tonnes;
- **Tailings:** 27 million tonnes; and
- **Sludges:** 0.2 million tonnes.

These waste types and Xstrata's management methods are further described on page 81.

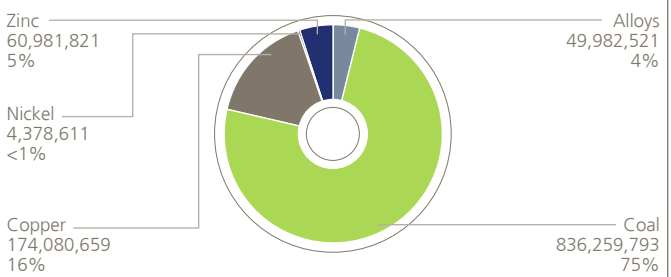
Mineral waste

Xstrata has identified the generation and storage of waste and tailings management as a material risk and is committed to reducing the quantity and toxicity of the mineral waste we produce, and to managing this waste safely and effectively.

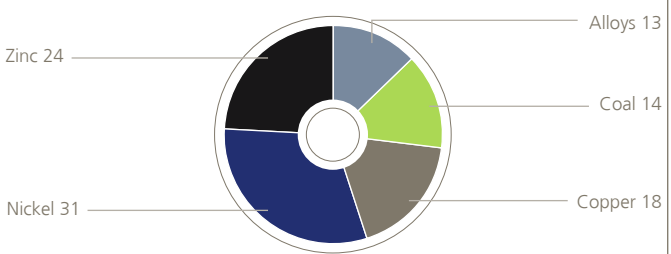
The mineral wastes that we produce include:

- Rock from the removal of strata to expose ores or coal;
- Tailings and slag from processing ore and concentrates, as well as coal mine tailings (known as fines) suspended in water; and
- Hazardous wastes such as jarosite (iron sulphate waste from zinc production), hydrocarbons and heavy metal contaminated sludge.

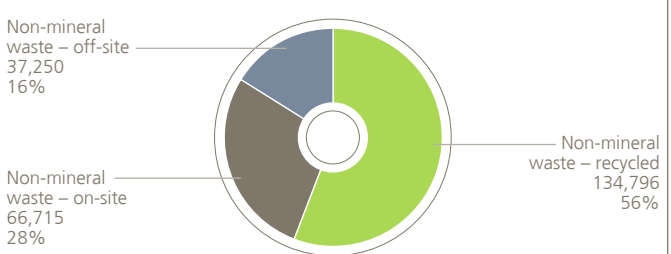
Mineral waste produced by businesses (2010)
(tonnes and %)



Non-mineral waste produced by businesses (2010)
(%)



Non-mineral waste by disposal method (2010)
(tonnes and %)



Waste rock

Waste rock can be disposed of or reused in a number of different ways. It can be placed in areas where open cut or underground operations once occurred as back fill, it can be reused during site rehabilitation to landscape the areas affected by our mining activities, or it can be stockpiled in carefully designated waste rock storage areas. These areas are controlled by us, and managed through shaping and revegetating the rock piles to mirror the natural environment and minimise the risk of any unwanted seepage or runoff.

Certain waste rock types – particularly rocks containing sulphide minerals – can undergo chemical reactions when they come into contact with air and water that produce sulphuric acid. This strong acid has the potential to leach heavy metals (such as lead, zinc and cadmium) from the residual ore in the waste rock. If this is not monitored and controlled properly, land and waterways can be negatively impacted both by the acidity of runoff and by the leached heavy metals. To minimise leachate generation we use a number of technologies, including capping, and where leachate does occur we manage it either by directly treating or containing and evaporating the solution.

Tailings and reject

Maintaining the integrity of tailings dams is a top priority for Xstrata as it directly affects the safety of our employees, local communities and the quality of the local environment. Appropriate design and management of tailings dams can prevent potential failure of a dam where even a small amount of leakage could negatively impact local water quality.

When designing our tailings facilities we consider potential worst case scenario weather and geological conditions like earthquakes, heavy rainfall, flooding and landslides. Independent specialist auditors regularly assess our site hazard management planning by analysing the degree of risk posed by sites' tailings based on size of the dam and frequency of seismic activity.

We consistently check the structural capacity of the dams and monitor ground water to avoid any leaching. Across our operations, we continue to seek opportunities to improve tailings management. No Xstrata operations allow disposal of tailings into local waterways. The lower quality carbonaceous material rejected during coal processing is stored in mined out pits or stockpiled for later rehabilitation. At Tweefontein and iMpunzi coal mines in South Africa, these dumps are re-mined and sold to Eskom for energy generation.

Hazardous and high iron content waste

The hazardous mineral waste we produce includes jarosite (a high iron sulphate content waste from zinc production) and heavy metal contaminated sludge. We take action to minimise these wastes, most of which result from our smelting operations.

At the Canadian CEZ and Spanish San Juan de Nieva operations, we convert jarosite to jarofix, a solidified, stabilised, inert material which can be disposed of into landfill. The jarofix process was developed and patented by CEZ. At San Juan de Nieva we use jarofix to rehabilitate a local quarry and our Nordenham site will begin to implement jarofix technology from the end of 2011.

Slag
Slag is a by-product of our smelting operations. We use this by-product or sell it commercially as a substrate for road construction or aggregate for bricks. Because it is used as a raw material, we do not classify slag as a waste material and it is not included in the data on waste generation.

Non-mineral waste

Hazardous and non-mineral waste mainly consists of hydrocarbon related waste and small quantities of refractory block. The majority of waste oil is sent offsite for recycling at licensed facilities. Waste oil, produced by Xstrata's sites, is categorised as being hazardous waste under the Basel Convention. In 2010, just over 10 million litres of oil was recycled at licensed premises and 78,000 litres was disposed of off-site.

Our non-hazardous waste consists of glass, paper, packaging, scrap metal, etc, that is either landfilled on-site, landfilled off-site in licensed facilities, reused on-site or sent off-site for recycling. Out of the 240,000 tonnes of non-mineral waste generated in 2010, we recycled about 135,000 tonnes (56%).

Recycling

Along with being a major mining and exploration company, Xstrata is one of the world's leading recyclers of electronic scrap. These materials contain precious metals including gold, silver, platinum, palladium and copper. Recycling has the twofold benefit of extending the life of these metals and reducing landfill volumes.

Managed by Xstrata Copper, Xstrata Recycling processes metallic copper scrap and over 110,000 tonnes of metal-bearing materials such as printed circuit boards, integrated circuits and mobile phones every year. As a result of the requirement that all electronic scrap must be recycled under the European Union's Waste Electrical and Electronic Equipment Directive, we have received a growing supply of electronic scrap for processing. We sample materials at facilities in Rhode Island and California to analyse their content, then process them at our Horne smelter and CCR refinery in Canada.

Xstrata Copper's recycling business works with plants principally located in Canada, the US and Europe, which process all of the end-of-life electronics and send the resulting material streams for appropriate recycling. These types of processing plants normally produce steel, aluminum, plastic and copper/precious metal materials that are sold to the most appropriate outlets. Little if anything is sent to landfill.

In 2010, over 288,000 tonnes of secondary waste was purchased from external sources and processed through our copper, nickel and lead/zinc smelters.

Our smelter dust treatment plant at Altonorte, Chile, enables us to recycle safely the stockpiled metallurgical dust that is generated during copper processing. Approximately 90% of the copper contained in the dust is recovered and can be fed back into the smelter. We have completed the treatment of historic dust stored at the site from previous operations and have submitted a proposal to process dust from third parties.

At our Mount Isa complex in Australia, we recycle tailings for use as a partial concrete substitute and filter engine and transmission oil to remove particulates enabling oil to be reused.

Product stewardship

Managing the sustainability of our business extends beyond the boundary of our operations. The metals we produce are used in a myriad of different products including infrastructure, electricity generation, buildings, industrial equipment, electronics, vehicles, medicines, chemicals and consumer goods, to name just a few. Metals and electricity improve the quality of life for people all around the globe.

With respect to coal, the primary product stewardship concern relates to GHG emissions from the burning of coal by our customers to produce competitively priced energy or iron and steel products. Xstrata acknowledges the need to reduce the GHG emissions from burning coal and we are working with others to develop the technologies needed to do so. Our efforts to support more efficient use of coal, and to develop methods of capturing and storing CO_2, are discussed in the Climate change section of this report (see page 63).

There are also certain risks associated with the use of the metals produced by Xstrata, including zinc, copper, ferrochrome, nickel, vanadium and lead. The main risks are associated with the dispersion of metals into the environment (mainly to soils, ground waters, surface waters and into the atmosphere) and their level of bioavailability, which determines whether or not they will be harmful to ecosystems and people and accumulate in the food chain.

Because of the inherent value and long life of many metals, the majority of what is produced remains captured – partly through reuse and recycling – in the stock of human infrastructure, equipment and products. A smaller proportion ends up in landfills. A final, small fraction is dispersed back into the environment, primarily via dust emissions (much of this coming from power plants) and runoff in aqueous solution (e.g. rainwater off copper roofing elements, waste effluents from industrial plants and the use of chemical products such as fertilisers, paints, wood preservatives, etc).

We are committed to minimising the dispersions of metals back into the biosphere and reducing the environmental and health risks associated with this. We aim to ensure the health, safety and environmental risks associated with the use, recovery, recycling and disposal of our products are properly understood and mitigated.

Since there are many producers and users of metals, and our metals are sold into a global market place, we believe that meeting our product stewardship commitment is best done in collaboration with the other key stakeholders including governments, industry associations, the scientific community and civil society organisations.

Much of our engagement on product stewardship is done via the commodity associations for our products, i.e., coal, copper, zinc, lead, nickel, chrome and vanadium. In many cases, the chief executives of our commodity businesses have taken active leadership roles in key working groups and governance committees at these organisations.

Stockpiles of recyclable materials at the Horne smelter, Canada. These will be converted into copper anode.

Xstrata Copper is a member of the International Copper Association (ICA) and is actively involved with its efforts to ensure copper is used safely and sustainably. Xstrata Copper's chief executive is the Chairman of the ICA; his General Manager for Environment sits on the ICA's Health and Environment Advisory Committee and chairs its eco-toxicology subcommittee. Xstrata Zinc has taken leading roles in the International Zinc Association and the International Lead Association. We play a role in engaging with regulatory agencies worldwide to ensure that regulations on the use of copper are based on sound science.

Making product stewardship a priority at Xstrata and implementing best practice also helps us better manage regulatory issues; we constantly monitor legal and regulatory changes that could affect our products or operations.

Every Xstrata product has a materials safety data sheet that provides pertinent information on product composition, toxicology relating to human health and the environment, fire and explosion risks, handling, storage and exposure issues and recommendations for managing spills and disposal. In addition to this, we inform all of our employees, contractors, customers and other stakeholders about the hazards and best practices for handling, transporting, using, storing and disposing of Xstrata products.

Many of Xstrata's products and the chemicals we use in their production fall within the scope of the European Union's regulation on the Registration, Evaluation and Authorisation of Chemicals (REACH). REACH makes industry responsible for assessing and mitigating the environmental and occupational safety risks of the chemical substances that they produce and use. We comply with toxicity testing required by REACH and have completed the pre-registration phase for all relevant products and substances. We have joined several consortia of producers to share costs and information during the registration process.

Xstrata's approach to product stewardship is illustrated in the following discussion of copper. Please visit our website for additional information on our other mineral products.

Copper

As a naturally occurring element, copper is present in the earth's crust, in oceans, lakes and rivers; from minute trace elements to rich mine deposits. It is essential to life – plants, fish and animals all need a certain level of copper to function properly. Copper also plays a significant role in energy-efficient products, due to its excellent thermal and electrical properties, as well as antimicrobial applications. At high concentrations, however, copper can become harmful to plants and animals so it is important to understand and mitigate the risks of copper dispersion into the environment.

In April 2008, the copper industry completed a voluntary risk assessment on copper. The risk assessment was approved by the European Commission and EU Member States. This comprehensive assessment, covering the production, use and end-of-life aspects of the copper value chain, shows that the existing legislative framework in the European Union generally safeguards Europe's environment, the health of industry workers and the general public. It suggests that with the proper awareness, management and policy frameworks, copper can be used in a sustainable manner.

Copper has been found to inhibit growth of bacteria and viruses. This antimicrobial property has made it useful in the design and manufacture of medical devices.

Unlike many other raw materials, copper is 100% recyclable indefinitely, without any alteration or performance loss. According to recent global data, of the 24 million tonnes of copper used annually, 35% is sourced from recycled material. In Europe alone, 41% of copper used is derived from recycled materials.

Copper's superior thermal and electrical conductivity, combined with its 100% recyclability, make copper a valuable commodity for building a sustainable world.