

# Facing the future in partnership

Sustainability report 2008/2009



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## **Disclaimer**

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# Message from our President and Chief Executive Officer

I am pleased to present our 2008/2009 Sustainability Report, which covers a wide range of issues important to both DUBAL, as a company, and our stakeholders.

2009 was a momentous year for DUBAL. We celebrated our 30th anniversary and sustained excellent performance despite the global economic downturn, which impacted all industrial sectors. Looking back over the two years, I am proud that we have not only weathered the difficult economic conditions, in which global demand for aluminium declined by 10 per cent, but also taken action to make DUBAL an even more robust company and laid a stronger foundation for our long-term sustainability.

I am particularly pleased with our production performance in 2009, as our decision to continue operating at full capacity and adapt our product portfolio mix to the changed needs of the market resulted in sales of more than one million tonnes of high quality cast aluminium products in one year, for the first time in our history.

Several factors contributed to DUBAL's successful passage through the global recession. Aiming to realise improved economic efficiency in every aspect of our business, we launched an innovative, suggestion-based initiative, called Triple C. It focused on Cash generation, Cash conservation and Cost reduction. Our employees responded with their traditional loyalty and commitment, submitting several

hundred ideas that collectively had significant impact on our expenditure and reduced our overall unit cost. The combination strengthened our excellence-based partnerships with our customers, suppliers, employees and business associates; and helped sustain our drive towards no harm to the environment and people, all of which remain at the top of my agenda.

In 2009, we launched a new behaviour-based safety programme — called Tamahal (Arabic for 'slow down') — which helps guide careful consideration of every action we take within our operations. This, along with other occupational health and safety initiatives enabled a 30 per cent reduction in Total Recordable Injuries (TRIs) in 2009. Our "Beat the Heat" programme, alone, resulted in our fourth consecutive year without a lost workday due to heat stress, thereby contributing towards realising our corporate objective of zero harm.

Indeed, our overall health and safety performance over the two years was very good. On 27 May 2009, we achieved 10.3 million hours and 399 days without a Lost Time Injury (LTI). Unfortunately, nine significant incidents occurred over the course of 2008 and 2009. One of the incidents — a power outage in the potlines — temporarily

affected our environmental performance. Where necessary, our on-site emergency response team provided excellent support, and the subsequent incident review process has resulted in stronger operational and safety programmes.

Our Environment, Health & Safety and Technical Services (EHS) department plays a significant role in minimising the impact of our operations on human health and the environment, both local and global. Over the two year reporting period we have continued to test innovative ideas, then invest in and implement those that offer greatest benefit. This has resulted in reduced emissions and energy consumption, the latter yielding substantial financial savings. The numerous case studies in this report cover many of our activities. As an active member of the International Aluminium Institute (IAI), DUBAL remains committed to attaining the global environmental objectives set out in the IAI Sustainable Development Initiative (SDI). In 2010, we will intensify our efforts to achieve these goals and ensure that we maintain DUBAL's status as a world leader in the aluminium sector.

Furthermore we delivered on our commitment to maintain job security for our employees, our greatest asset, throughout the

economic downturn; and also increased the number of training days per employee substantially between 2007 and 2009.

At DUBAL, our community starts within the geographic boundaries of our site, where our residential area provides excellent employee accommodation that consistently exceeds expectations — from the space entitlement per employee to the wide range of recreational and other facilities available. Beyond our site's boundaries, the residents of the Emirate of Dubai are our wider community. We invest substantial time and financial resources directly and through various community groups to ensure Dubai is culturally vibrant and physically healthy; and that education programmes extend the career horizons of our residents.

I am confident you will find this Sustainability Report valuable and interesting, whether you are an employee, customer, supplier, UAE resident, non-governmental organization, the media, the government or a financial institution. Compiled in line with the AA1000 AS standard and the Global Reporting Initiative (GRI), its contents should give you in-depth insight into our business.

We welcome your comments and dialogue on key issues; and undertake to compile and release

our next biennial sustainability report (for the 2010/2011 period) in 2012.

**Abdulla Jassim Kalban**  
President & Chief Executive Officer



# Introduction

DUBAL's first Sustainability Report was published in 2008 and detailed the overall sustainability performance of the company in 2007. This is the second such report and addresses the period from 1 January 2008 to 31 December 2009.

The contents of this report are organized according to the three globally recognised pillars of sustainability, namely economic, environmental and social sustainability. The tables on pages 50 to 54 provide data for the period 2006 to 2009 and illustrate our longer-term sustainability performance.

We have utilised Version 3.0 of the GRI Guidelines as our primary guidance on content, and Version 6.0 of the GRI Mining and Metals Sector Supplement where relevant to our operations. In addition, this report has been developed using the principles outlined in the AA1000 Assurance Standard, including materiality, completeness and responsiveness.

The Principle of Materiality in Sustainability Reporting has been applied through consideration of each stakeholder's interests in our performance. Where our performance could have a significant impact upon a stakeholder, the issues of relevance are discussed within this report.

We determine the level of material relevance and significance for each issue to each stakeholder by utilising input from these groups, balanced with the expert opinion of our Executive Management. Although the process is not formalised in a procedure, we

are able to make informed decisions about issues of material significance to our business. In addition, we have relied upon the advice provided by WSP Middle East (Environment and Energy) for independent confirmation of our evaluation of the materiality of issues.

## Amendments to our 2007 Sustainability Report

In accordance with the GRI Guidelines, any amendments or corrections to the previous sustainability report need to be identified in subsequent reports. In this regard, data in the following areas in our 2007 Sustainability Report has now been revised for accuracy:

- Waste
- Water production
- Aluminium production
- External electricity sales
- Purchased anodes

These revised figures are now correctly reported in the tables on pages 50 to 54.

DUBAL no longer reports on the Gained Output Ratio (GOR) of our water Desalination Plant. This is because an accurate calculation of the GOR value can only be performed under some baseline operational conditions and such baseline keeps changing over an extended period of time.

## Scope of this report

This report covers our global operations where materially significant, including DUBAL America Incorporated. It does not cover operations, such as our customer service centres with office operations only; nor does it cover the operations in which we do not have a majority share, including our upstream investments.

Digital copies of our sustainability reports are available online at [www.dubal.ae](http://www.dubal.ae)

## For further information

Should you have any comments and queries relating to this report, please direct these to:

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# Corporate profile

Dubai Aluminium Company Limited (DUBAL) owns and operates one of the world's largest single-site aluminium smelters with a captive power station and therefore ranks among the largest aluminium producers in the world. In 2009, we produced over one million metric tonnes of finished, high quality aluminium products.

Our head office and primary operations are located in Jebel Ali in the Emirate of Dubai, one of seven Emirates that make up the United Arab Emirates (UAE). We also operate four regional offices, located respectively in Korea, United States of America, Switzerland and Italy. We manufacture an array of value-added products in three main forms: foundry alloy for automotive applications; extrusion billet for construction, industrial and transportation purposes and billets for forging applications; and high purity aluminium for the electronics and aerospace industries. More than 250 customers are served in at least 40 countries around the world, predominantly in the Far East, Europe, the ASEAN region, the Middle East and North Africa (MENA) region, and North America.

Having begun to produce metal in 1979, DUBAL celebrated its 30th anniversary in 2009. A timeline of the major highlights over our 30-year history is available on our website, [www.dubal.ae](http://www.dubal.ae).

## Our corporate strategy

Our vision, formulated in 2005, is for DUBAL to become the world's fifth-largest producer of primary aluminium by 2015. This is supported by several core goals, towards which we continually strive — including being the supplier of

choice; the lowest-cost producer of primary aluminium; a substantial contributor to the GDP of the UAE; being the employer of choice, especially for UAE Nationals; and maintaining our focus on protecting the environment as well as the health and safety of our employees and the community.

Our corporate strategy is based on four key areas:

- Financial success
- Our customers;
- Operational excellence; and
- Our people.

Ten operating units, covering both operational and service support areas, are responsible for delivering the strategy. Each operating unit holds a monthly meeting to ensure alignment between the strategy and our operations. At corporate level, meetings are held on a quarterly basis to enable our senior management to review DUBAL's overall performance and ensure that it remains aligned with our corporate strategy.

In response to the economic recession that began mid-2008, our corporate strategy plan for 2009 was based on initiatives, appropriately named Triple C, which focused on Cash generation, Cash Conservation and Cost reduction. Through innovative ideas, the Triple C

campaign had a positive impact on our expenditure and reduced our overall unit costs.

For 2010, efforts will remain focused on achieving our economic, social and environmental sustainability goals. Our progress in this area to date is demonstrated by our continued investment in environmental and energy projects as well as in creating a safe and healthy work place for our employees.

## Our strategy for sustainability

As per the three pillars of sustainability, we endeavour to remain economically robust while protecting the environment and contributing to society. These aspirations are not only interwoven into our vision, strategic goals and day-to-day operations, but also enable continual improvement in our performance across all categories, despite any challenges we may face.

We define our sustainability objectives as follows:

- Causing no harm to people, the environment and the local community;
- Effective governance and risk management processes;
- Recognising the need to be socially responsible by contributing to sustainable community development; and

- Ensuring the broader economic contributions of our operations are injected effectively into the local economy.

Some of our Sustainability performance highlights from the 2008/2009 period are highlighted in subsequent chapters entitled Economic Sustainability, Environmental Sustainability and Social Sustainability.

Our balanced scorecard (BSC) for 2008 and 2009— which provides the objectives, targets and performance criteria against which we measure ourselves at DUBAL — is summarized on pages 7 and 8.

## Awards achieved

We are proud to have received several awards in 2008 and 2009, at both corporate and individual level. In particular, we recognise the achievement by our President & CEO, Abdulla Jassim Kalban, who received the 2008 Middle East Business Achievement Award (MEBA) for Businessman of the Year.

The range of awards won by the business as a whole (listed in Table 1) illustrates that our focus is not just on our financial bottom-line, but also on our overall sustainability performance.

Table 1: Awards received in 2008 and 2009.

Year	Award	Organiser
2008	Idea of the Year Award Overall Idea of the Year Award Best Program Administrator Award	USA Employee Involvement Association <sup>a</sup>
2008	Idea of the Year Award Productivity Award	Ideas.Arabia competition <sup>b</sup>
2008	International Award	Ideas.UK <sup>c</sup>
2008	Information Technology Governance Assurance Forum Award for IT Governance – Commercial Category	IT Governance Assurance Forum (ITGAF) <sup>f</sup>
2008	Excellence in Information Integrity (For-Profit category) – Gold Award	Information Integrity Coalition (USA)
2008	ACN Arab Technology Best Manufacturing and Construction Sector Implementation	ACN Arab Technology Awards <sup>e</sup>
2008	Major Energy Award – 1st place Major Energy Award – Runner-up Minor Energy Award – Runner-up Energy Engineer Award 2008 – Runner-up	Emirates Energy Awards <sup>d</sup>
2008	CIO 20 Middle East 2008	CIO Middle East
2008	MRM Business Award 2008 – Manufacturing Category	Mohammed Bin Rashid Al Maktoum Business Awards
2009	Idea of the Year Award Health & Safety Award Technology Award (two of) Productivity Award Special Recognition Trophy	Ideas.Arabia competition <sup>b</sup>
2009	Best Exporter 2009	Middle East Logistics Awards
2009	Transmission & Distribution Project of the Year Award 2009	Power Generation and Water Solutions
2009	Oracle Business Intelligence/Enterprise Performance Management ("BI/EPM") Innovation Award	Oracle
2009	Health and Safety Trophy	Ideas.UK <sup>c</sup>
2009	Top 10 CIO Strategies Award Middle East 2009	CIO Middle East

a- USA-EIA is a non-profit service organization dedicated to the worth, contributions and benefits of employee suggestion systems and other employee involvement processes. b- Ideas.Arabia is a forum of companies formed under the umbrella of DQG to optimise and focus the effectiveness of suggestion scheme programmes. c- Ideas.UK is the professional body which provides advice and guidance to help promote the development of staff suggestion scheme programmes. d-The Emirates Energy Award is an initiative under DQG which recognises the best energy conservation and management practices in the Arabian Gulf. e- ACN (Arabian Computer News magazine) Arab Technology Awards recognise the very best enterprise end-user implementations across the Middle East, f- For implementation of Smelter Analytics.

## Balanced Scorecard 2008 to 2009

■ Below target ■ On target ■ Above target

Target	Performance	
Financial	Result	2008/2009
Ensure adequate cash generation	■	Cash generation from operations was sustained at robust levels and despite the economic downturn in 2009, cash from operating activities was better than target and declined by only 5% as compared to the previous year.
Reduce operating costs	■	In 2008, due to higher input prices, the operating costs were higher than target. However, in 2009 DUBAL achieved better than targeted unit cost through Triple C campaign in response to economic downturn.
Customers	Result	2008/2009
Deliver high quality products and services	■	Average number of days to close customer complaints was improved significantly.
Attract and retain preferred customers	■	Received lower customer complaints and recent survey revealed that the customers are satisfied with products and services.
Promote DUBAL brand	■	DUBAL brand refreshed, strong exposure obtained in the media and at trade events.
Achieve Operational Excellence	Result	2008/2009
Aggressively optimise procurement of raw materials	■	Ensured raw materials were purchased at competitive prices.
Develop and market reduction technology	■	Delivered DX technology to EMAL and D20 technology to Hormozal.
Effective implementation of CAPEX projects	■	85% of 2008 projects and 100% of 2009 projects were implemented on time.
Leverage IT infrastructure to support business needs	■	Achieved 99.42% uptime in 2009.
Achieve and sustain best-in-class operational effectiveness (casthouse, power and desalination, smelter)	■	Higher hot metal production, lower energy consumption, lower carbon consumption, lower melt loss, improved equipment availability. However, production recovery in casthouse and power station efficiency were marginally lower than target.

Target	Performance	
Market & Business Development	Result	2008/2009
Build new markets & expand customer base and market share	■	Customer base has increased from previous years.
Manage strategic partnership with core business and upstream	■	Strategic partnerships and project development work continued well. Two new upstream projects — CAP in Brazil and CAL in Cameroon — commenced. New partnerships have been developed with Vale, Norsk Hydro, Hindalco and others.
Corporate Social Responsibility	Result	2008/2009
Be a good and pro-active corporate citizen	■	Investments made in education, sports, environment, community projects.
Achieve world-class EHS performance	■	LTIFR, TRIFR and heat rash measures were well within the target. Fluoride and PFC emissions marginally slipped the target, but were well within municipal standards.
Learning and growth	Result	2008/2009
Nurture the culture of result-orientation and customer-focus	■	Targets set for performance management were fully met.
Attract, retain and develop skills	■	Employee turnover rate was within the target.
Develop and increase total number of UAE National employees	■	Training man-days per employee targets were accomplished.



### The aluminium smelting process

The basis for all primary aluminium smelting is the Hall-Héroult Process — an electrolytic process invented in 1886 and named after its inventors, which reduces ore directly to metal. In essence, an aluminium smelter comprises electrolytic reduction cells, connected in series and arranged in long lines known as 'potlines'.

The basic structure of each cell is a large carbon-lined steel container, which forms the negative electrode (or cathode). This contains an electrolytic bath of molten salt called 'cryolite' ( $\text{Na}_3\text{AlF}_6$ ), into which a powder of aluminium oxide is fed and becomes dissolved to form a solution. Large carbon blocks, made from calcined petroleum coke and liquid coal tar pitch, are suspended in the

solution, and serve as the positive electrode (or anode).

Direct current (DC) is fed into the electrolytic cells and passes through the solution. This dissociates the aluminium oxide into molten aluminium and oxygen. The oxygen reacts with the anode blocks to form carbon dioxide ( $\text{CO}_2$ ), which is released. The 'hot' aluminium obtained in the process is tapped from the cells and then transported to the casthouse for alloying and casting into ingots or billets.

Our Jebel Ali Smelter has 1,573 reduction cells in eight potlines and produces almost one million tonnes of molten aluminium per year. The metal purity obtained is about 99.89 per cent aluminium, including high purity metal — which contains more than 99.96 per cent aluminium.

Our Smelter is supported by various auxiliary and complementary facilities, comprising extensive port and raw material handling facilities; a large Carbon Plant (where anodes are manufactured); and one of the world's largest Casthouse operations (with a production capacity of 1,271,000 metric tonnes per annum). We also have a captive combined cycle Power Station, which provides both electrical energy to the Smelter for the electrolytic reduction process and steam to our water Desalination Plant.

As outlined under Environmental Sustainability from pages 22 to 33, DUBAL is mindful of the potential impacts our operations may have on the environment. Accordingly, substantial investment is made, on an ongoing basis, in implementing state-of-the-art technology to minimize the environmental impact of our operations.

A fully detailed description of the aluminium smelting process and the facilities at our Jebel Ali site will be uploaded onto our website ([www.dubal.ae](http://www.dubal.ae)) during 2010. Figure 1 alongside is a schematic diagram of the process at DUBAL.



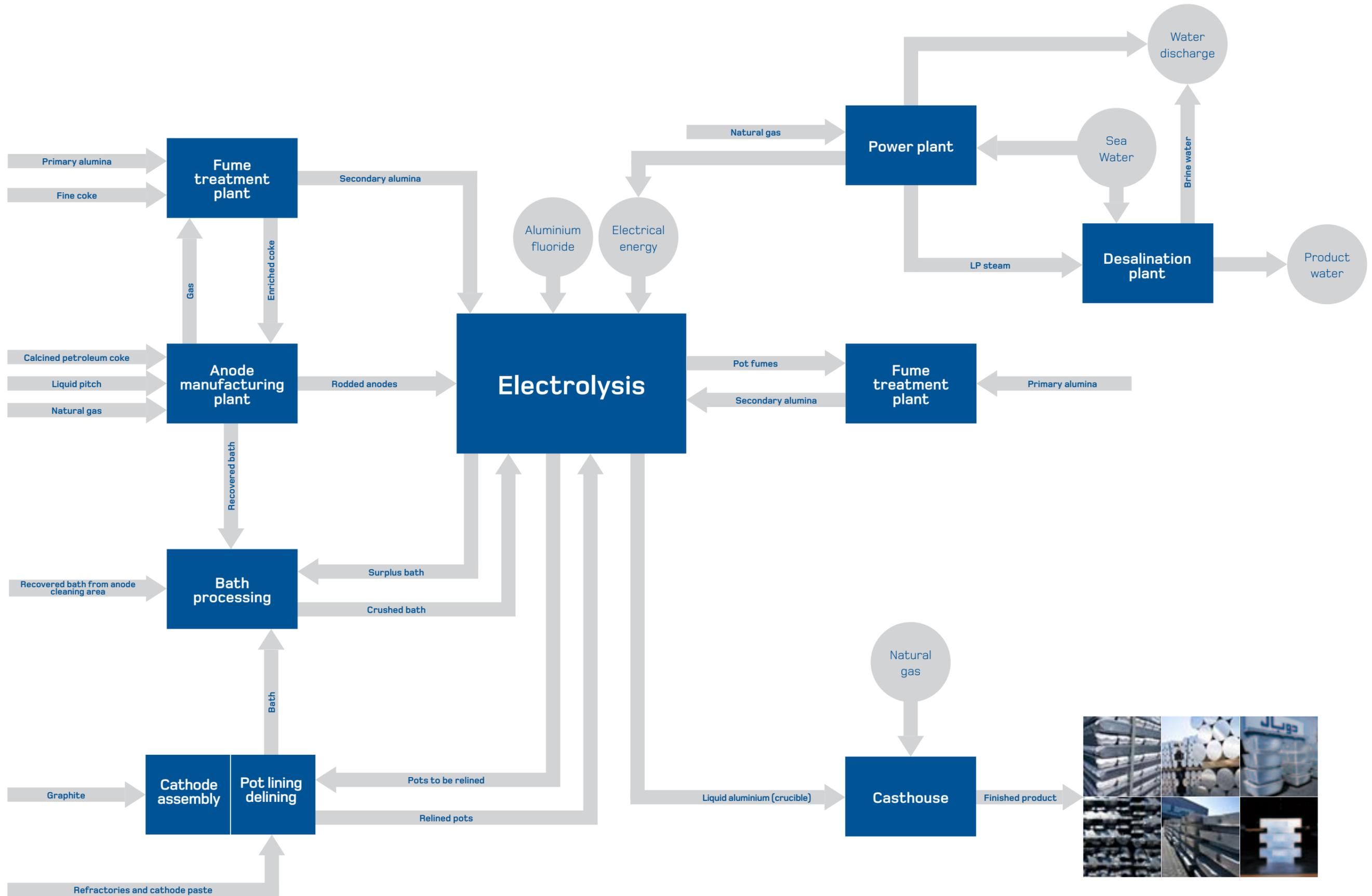


Figure 1: DUBAL process flow diagram.

# Governance

At DUBAL, we strive to implement highly effective standards and processes to demonstrate strong corporate governance. This is reflected in our core values and will ensure our long-term success.

Our approach to corporate governance is based on sound business ethics in conjunction with global best practice. Inherently, our governance structure is designed to optimise economic, environmental and social sustainability within our organization.

The governance structure at DUBAL consists of the Board of Directors, the President & Chief Executive Officer (CEO), and the Executive Management Committee (see Figure 2). Three key committees support the Board, namely the Finance Committee, Technical Committee and Audit Committee, the details of which appear on pages 13 and 14.

To support the implementation of business plans and ensure that Board directives are achieved by the President & CEO, several committees operate within the office of the President & CEO. These include committees on: Hedging; Governance and Internal Controls; Investment; Credit Review; Project Tenders; Purchasing Tenders; Mechanical Engineering; Smelter Projects Steering; Information Technology Governance; Electrical Engineering; Technology; and Environment, Health & Safety.

Independent assurance is provided through an internal audit function, external auditors and auditors representing the government of Dubai.

The Executive Management Committee's responsibilities include ensuring that appropriate actions are taken on strategic issues and corporate objectives so as to create, protect and maintain shareholder value. Our Executives undergo performance evaluations and their compensation (beyond their basic salary), is based on the economic, environmental and social performance of DUBAL. Departure arrangements for Executives are wholly based on UAE labour law, which among others, requires the payment of a gratuity based on length of service.

The Board is distinct from the Executive Management Committee and shares no members. In addition, the Chairman of the Board is not an executive of DUBAL. The Board meets at least six times per year.

In addition to his direct management responsibilities at DUBAL, the President & CEO is a member of several government committees, including the Energy Council for Dubai and the Federal Energy and Water Authority.

DUBAL is committed to promoting and supporting a culture of open communication between all levels of employees. We use a number of channels to facilitate this dialogue, including the "Voice Your Opinion" survey every two years, direct emails to the President & CEO, a Grievance

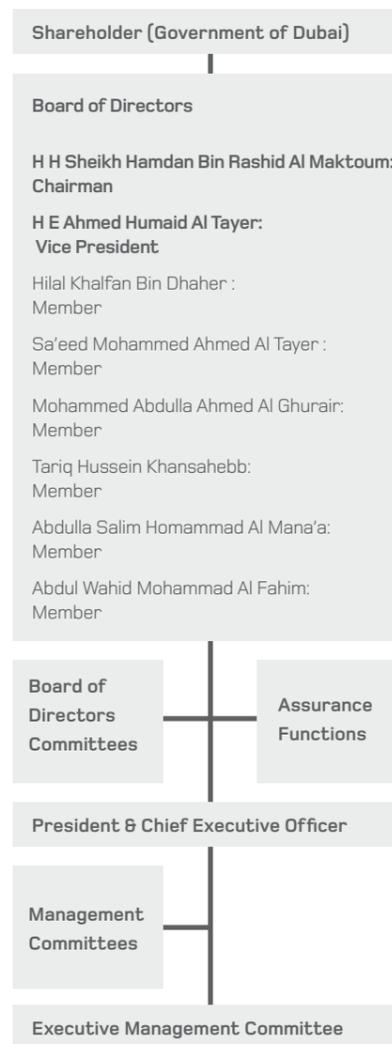
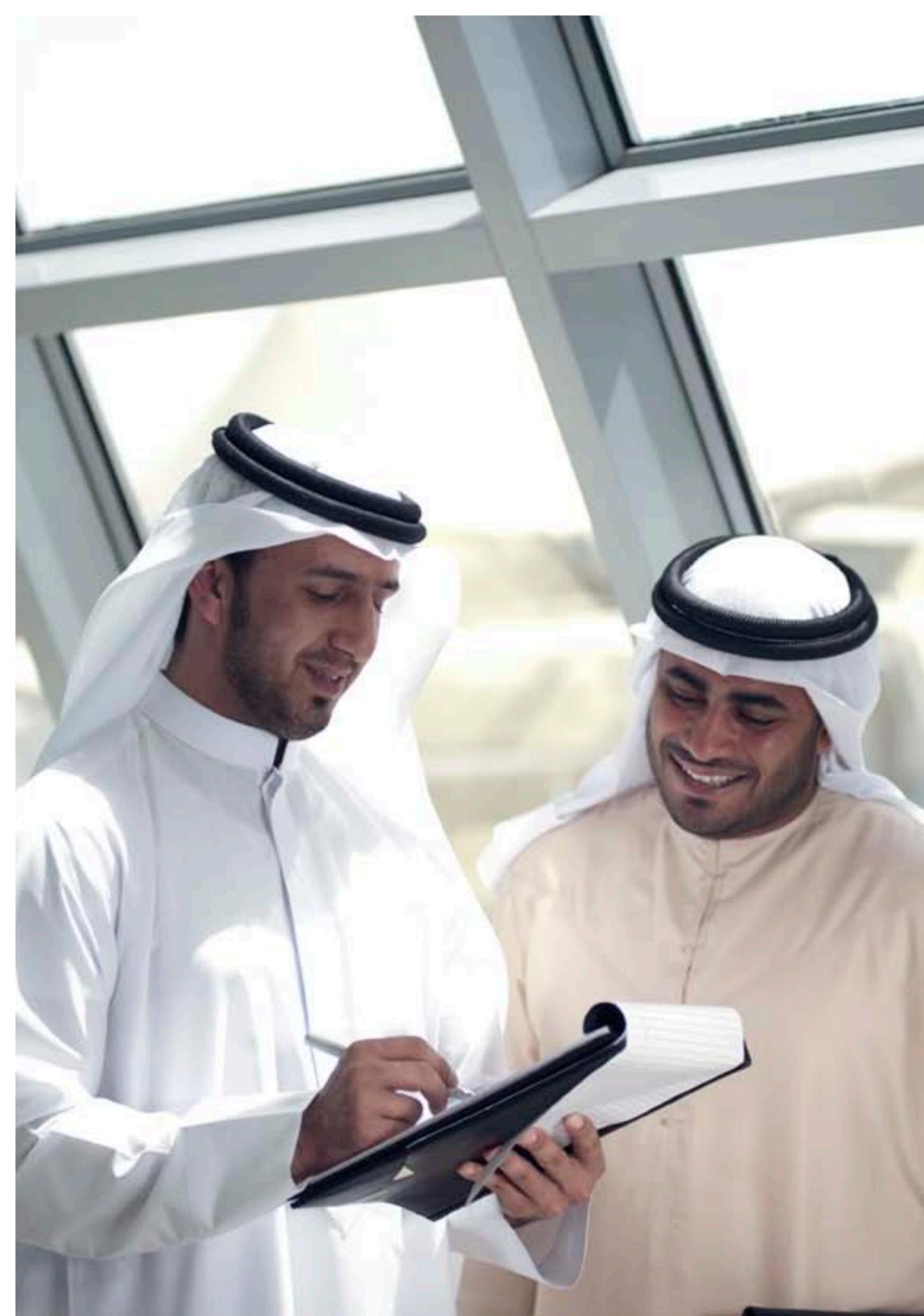


Figure 2: Governance organogram at DUBAL, 2009.



System and an Issue Logging Form. There is a clear, documented procedure for each of these mechanisms, which includes timelines for responding to employees and a clearly identified escalation processes.

We have also developed a Levels of Authority (LOA) system, which sets out rules for decision-making based on seniority and level of responsibility within the company. The system includes a process of checks and requirements for the periodic review of authority levels. The LOA system governs decisions that will have either a financial impact, an effect on employees, or present a risk to the business. We are attentive to the prevention and detection of corruption and fraud. Investigation procedures are included within our disciplinary policy and more detailed procedures will be implemented in 2010.

Continuous improvement is built into our corporate culture. To this end, we have re-engineered our team-based performance programmes to facilitate ongoing significant improvements in the performance of each of our teams. This has included enhancing our Business Excellence (BE) programme by adding

scientific problem-solving tools and methodologies, such as additional quality control tools and the Lean Six Sigma (LSS) approach.

A team of Japanese examiners from the Union of Japanese Scientists and Engineers (JUSET) conducted a Total Quality Management (TQM) Diagnosis of our company in 2009. The findings included a number of valuable lessons, which will help in our ongoing journey towards excellence in all aspects of our business and operations.

As a corporate entity, DUBAL is certified to several international standards supporting effective business management, quality and environmental, health and safety performance, including:

- ISO 9001:2008 Smelting & Casting of Primary Aluminium
- ISO/TS 16949:2009 Casting of Primary Aluminium & Alloys
- ISO 9001:2008 Desalination, Power and Engineering Operations
- ISO 14001:2004 Smelting & Casting of Primary Aluminium
- OHSAS 18001:2007 Smelting & Casting of Primary Aluminium

- ISO IEC 27001:2005 Information Security Management System
- ISO IEC 20000-1:2005 IT Services Management

The Implementation of these standards is supported by policy statements which guide both operational and strategic decision-making in every department. The list of statements and their implementation status is given in Table 2.

Our Code of Conduct addresses accurate, fair and equitable treatment of employees, business ethics, conflict of interest, whistleblowing procedures and so on. We strive to adhere to all applicable and relevant regulations and have not had any incident of non-compliance with international and national standards and laws.

**Finance Committee**

The Finance Committee oversees our financial management, reporting processes and internal control functions, with responsibilities including reviewing budgets, financial reports, treasury operations, banking and financing arrangements, hedging strategy and hedging transactions. The Committee meets at least four times a year.

The members of the Finance Committee are Abdul Wahed Mohammad Al Fahim (Chairman), Tariq Hussein Khansaheb, Hilal Khalfan Bin Dhaher, and Abdulla Kalban.

**Technical Committee**

The Technical Committee oversees our technical issues, the utilisation and maintenance of our equipment, with responsibilities including reviewing major engineering projects, development and proposed changes in operating technology, and tenders for the acquisition of equipment, materials and services.

Table 2: List of DUBAL policy statements, as at end 2009.

Statement	Implementation Status
Code of Conduct	Full
Quality, Environment, Health and Safety Policy	Full
Audit Committee Charter	Full
Internal Audit Charter	Full
Corporate Social Responsibility Policy	Full
Recruitment Policy	Full
Crisis, Emergency and Business Continuity Management Policy	Full
Information Security Policy	Full

The Technical Committee also reviews the capital and operating budget and meets at least four times a year.

The members of the Technical Committee are Saeed Mohammed Ahmed Al Tayer (Chairman), Tariq Hussein Khansaheb, Mohammed Abdulla Al Ghurair, Abdulla Salem Al Mana and Abdulla Kalban.

**Audit Committee**

The Audit Committee assists the Board of Directors in fulfilling its oversight responsibilities in monitoring the integrity of the financial statements and reporting process, the system of internal control, the audit process, our process for monitoring compliance with laws and regulations, as well as our code of conduct.

This committee's responsibilities include overseeing the internal and external audit process, assessing our risks and control environment, reviewing and approving the Internal Audit Charter, approving the risk-based internal audit plan and budget, determining whether critical business risks have been identified and reviewing external auditors and their reports. The Audit Committee meets at least four times a year.

The members of the Audit Committee are His Excellency Ahmed Humaid Al Tayer (Chairman), Saeed Mohammed Ahmed Al Tayer, Abdulla Salem Mohammad Al Mana, Abdel Wahed Mohammad Al Fahim, Hilal Khalfan Bin Dhaher and Tariq Hussein Khansaheb.

**Industry forums**

We are also an active member of several regional and international bodies such as the International Aluminium Institute (IAI), Dubai Quality Group (DQG), London Metal Exchange (LME), Gulf Aluminium Council and Emirates Environmental Group (EEG) with whom we work collaboratively towards sharing knowledge and the exchange of ideas.



## Economic sustainability

At DUBAL, we support a holistic view of economic sustainability and agree that it is not just about the financial performance of our organization. Instead, economic sustainability should reflect the degree to which the wealth generated and resulting financial resources are used to contribute to society.

This includes, among others, investment in employees, job creation, support of the supply chain, investment in the future, investment in the community, training and education programmes, and support of national economic growth.

Despite the global economic downturn and sharp decline in LME aluminium prices, we achieved operating profit and positive cash flow from operations in both 2008 and 2009 with cash from operating activities declining by only 5 per cent in 2009 as compared to the previous year. This was achieved through a dedicated focus on generating cash,

conserving cash and reducing costs in 2009, together with strategic exploration of new products and adaptation of our product mix to suit.

In 2009, a number of primary aluminium producers recorded losses and/or curtailed production. DUBAL continued to operate at full capacity for almost the entire year and our production of cast aluminium products increased to a record 1,001,257 metric tonnes for the year. This was achieved by changing our production mix in 2009 to suit market demand, by way of a decrease in value-added products in favour of standard purity aluminium

(P1020) in the form of ingots and sows (large ingots) — thus clearly demonstrating our flexibility and responsiveness to the market.

Our strategy is to sell the majority of our cast metal production to end-user customers. However, in response to the extraordinary market conditions in 2009, we sold, approximately 14 per cent of our total production for the year to LME warehouses.

As illustrated in Figure 3, Asia remained our biggest market over the 2008/2009 period. Tonnes sold remained essentially stable at 42 per cent in 2009 (2008: 37 per cent). Sales to both the European and

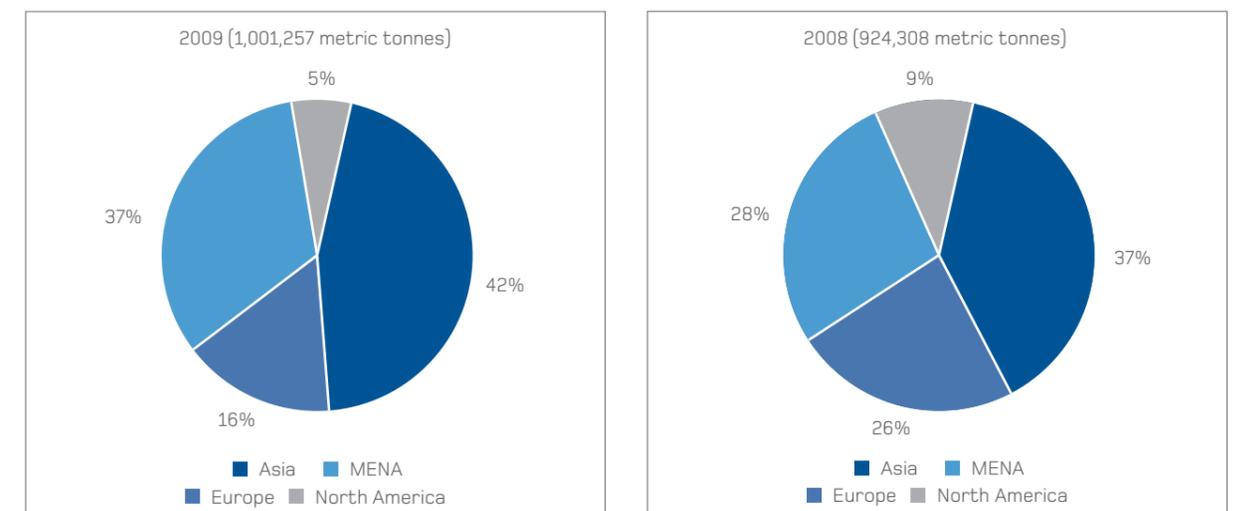


Figure 3: Comparative sales per region, 2008 and 2009.

### Case study:

## Sustaining our Supply Chain during the economic downturn

The Triple C initiative was fundamental to our strategy for weathering the economic downturn. The collective savings realised through all of the ideas generated by our employees allowed us to continue to support our suppliers, customers, employees, the community and the environment. As a result of the focused effort, we not only realised significant savings in 2009, amounting to US\$ 83/tonne of aluminium, but have as an objective to continue generating savings.

A significant proportion of savings were identified through evaluation of our Supply Chain processes. Our suppliers are extremely important to us and we sought to maintain all supplier and vendor relationships through mutually agreed, revised contracts that not only support continued business for the suppliers but also cost-savings across our entire Supply Chain.

We also introduced a purchase card system enabling employees to authorise and process low-value purchases without needing to engage the procurement team, thereby saving time and resources.

By carefully monitoring particular market indices with a view to realising savings through delaying purchases of steel, an estimated cost-savings of US\$ 89,970 was achieved.

We also implemented the Khaleek Khafeef Project, a smart inventory solution, to optimise our inventory through the involvement of technical employees in inventory decision-making without impacting on our sales or operational capability. The primary option implemented was the consignment stock concept leading to a US\$ 679,778 reduction in inventory value in 2009.

North American markets decreased in 2009 compared to 2008, in favour of a proportional increase in sales to the MENA region, which remained our second largest market and accounted for 37 per cent of 2009 tonnages (2008: 28 per cent).

This change in relative market share was mainly the result of the MENA region being less severely impacted by the global economic crisis than Europe and North America. Sales to new customers in the MENA region also contributed to the relative geographic shift in sales in 2009.

### Key capital and investment projects

Over the reporting period, we implemented a US\$ 1.1 billion capital expenditure programme, which included approximately US\$ 621 million in expansion projects. This increased the nominal production capacity of our Jebel Ali smelter operations from 925,000 metric tonnes of molten metal per annum in 2007 to 990,000 metric tonnes at the end of 2009.

We expect to invest in further projects at our Jebel Ali operations in 2010. The focus will be on maintenance and sustaining capital expenditures.

### Cost control measures and liquidity

In 2009, the focus of our corporate strategy on Cash generation, Cash conservation and Cost reduction was embodied by the Triple C campaign, which aimed to maximise our profitability by reducing the unit cost of production.

Inventory levels were reduced, spending on upstream projects was monitored closely and a number of other cost reduction and cash conservation measures were pursued. The initiatives adopted included negotiation with suppliers in respect of raw material prices

and timing of delivery (detailed in the case study on the left); and individual department savings in respect of process delivery and cost-cutting measures.

We also reduced capital expenditure at our Jebel Ali operations. To preserve available liquidity sources and strengthen our cash position, we drew down the existing unsecured term-loan facilities entered into in 2002 and 2006.

Our principal source of liquidity is cash flow from our operations, supplemented by available cash on deposit, available borrowings under our term-loan facilities and short-term borrowings from banks. This is deployed to cover operating costs, capital expenditure, investments in joint ventures, working capital, repayments of principal and interest under term-loan facilities, and payment of dividends.

### Outlook

LME aluminium prices have improved substantially since the first half of 2009 and DUBAL is well-placed to seek out opportunities that may arise as global aluminium demand recovers. However, we recognise that the global economic recovery remains fragile and uncertain. Accordingly, Executive Management intends to continue to pursue the cost reduction and cash conservation measures initiated in 2009 for the year ahead.

In this context, the relative priority given to the development of upstream bauxite and alumina refinery projects will continue to be evaluated with our joint venture partners on a case-by-case basis.

In 2010, we expect both molten metal and cast aluminium production to equal or exceed the levels reached in 2009 and for our operational cost structure to remain relatively stable. With

respect to LME aluminium price movements, we have implemented a hedging programme for 2010 and part of 2011, which gives DUBAL downside price risk protection for a substantial part of budgeted sales. We believe that the most effective long-term price risk management policy is to remain a low-cost producer and we will continue to evaluate our hedging strategy as market conditions evolve.

## Future-focused investments

### Core investments

In February 2006, DUBAL entered into a joint protocol with Abu Dhabi's Mubadala Development Company (Mubadala) to leverage the synergy of our efficient aluminium technology and expertise and Mubadala's energy and industrial development plans. We subsequently signed a 50:50 joint venture agreement with Mubadala in February 2007 to create Emirates Aluminium (EMAL), with the mandate to develop a new aluminium smelter at Al Taweelah, Abu Dhabi.

The EMAL project is designed to be the largest single-site aluminium smelter in the world. It will be built in two phases. EMAL Phase I is expected to produce 740,000 metric tonnes of aluminium per annum. The ultimate production capacity of EMAL at the end of Phase II is projected at 1.4 million metric tonnes per annum.

The construction of EMAL Phase I (comprising a 756-cell smelter plus associated power generation, reduction material and casting infrastructure) is well advanced: site work commenced in January 2008; and began production in December 2009, marked by the production of the first molten metal and cast metal. The continued development of the EMAL Project will remain a strategic priority in 2010 as it represents a key part of our strategy to expand our overall production capacity. Our rights and obligations

in respect of our 50 per cent ownership of EMAL are outlined in the joint venture agreement between Mubadala and ourselves.

Going forward, DUBAL's economic sustainability will continue to be based on its strong cash generation from operations, supplemented by long-term financing to meet its significant capital and investment expenditures for the completion of EMAL Phase I and, to a lesser degree, in respect of our Jebel Ali smelter complex.

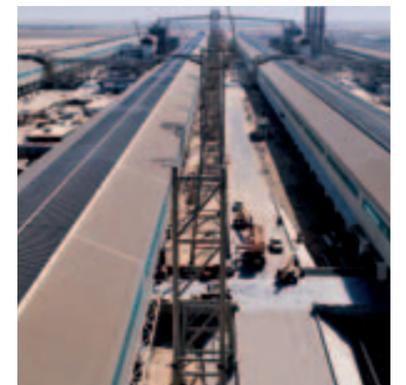
Pursuant to our 2006 joint protocol, DUBAL is jointly reviewing with Mubadala potential green-field aluminium smelter projects in the MENA region.

### Upstream investments

Investments are also being made to secure DUBAL's requirements of alumina. Currently, DUBAL is engaged in four strategic upstream bauxite/alumina projects that are in various stages of development, as detailed below. As of 31 December 2009, our total investments in bauxite mine and alumina refinery projects amounted to US\$ 260.6 million.

#### Brazil:

**Companhia de Alumina do Pará**  
DUBAL entered into a joint venture agreement with Companhia Vale Do Rio Doce (Vale) in 2009, in terms of which we acquired a 19 per cent interest in Companhia de Alumina do Pará (CAP), an entity formed to develop a green-field bauxite and alumina refinery in Brazil. The green-field bauxite and alumina refinery is expected to produce 1.9 million metric tonnes of alumina per annum in its initial phase and ultimately reach an annual production of 7.4 million metric tonnes upon the completion of successive expansion phases. Each shareholder will have the right and obligation to purchase alumina from CAP pro rata to its



respective equity participation. A feasibility study has been completed, and earthworks have started.

In May 2010, Vale entered into an agreement with Norsk Hydro through which, among other things, Norsk Hydro will own 81 per cent of the CAP project.

#### Republic of Guinea: Guinea Alumina Corporation

In 2007, DUBAL and Mubadala entered into a shareholders' agreement with BHP Billiton and the original promoter, Global Alumina International, to develop and operate a 3.3 million metric tonne per annum alumina refinery with an associated bauxite mine in the Republic of Guinea. We currently have a 25 per cent equity interest in the project company, Guinea Alumina Corporation (GAC) BVI, while Global Alumina International and BHP Billiton each have a 33 per cent equity interest and



Mubadala holds 8.33 per cent. DUBAL's off-take rights and obligations pursuant to an off-take agreement entered into in accordance with the shareholders' agreement are expected to be up to 25 per cent of the annual alumina production of GAC BVI, subject to a weighted reduction depending, among other factors, on the price of alumina.

Separately, DUBAL entered into a long-term alumina supply agreement with GAC BVI for the supply and purchase of an aggregate of 15 per cent of the total alumina production of GAC BVI during the term of the alumina supply agreement.

Community development work has progressed significantly and includes local labour training, capacity building for small- and medium-scale business enterprise, HIV/AIDS awareness programmes, malaria control strategies and so on.

**Cameroon:  
Cameroon Alumina Limited**

DUBAL entered into a joint venture with Hindalco Industries of India (Hindalco) and Hydromine Inc. of the United States (Hydromine) in 2008 to develop and operate a bauxite mine and a green-field bauxite and alumina refinery in northern Cameroon.

DUBAL and Hindalco each hold a 45 per cent equity interest in the project, while Hydromine holds 10 per cent. Each shareholder has the right and obligation to purchase alumina pro rata to its respective equity participation. Studies have confirmed reserves of approximately 600 million metric tonnes of high quality bauxite. An application for a mining license has been submitted, and the mining license is currently expected to be granted.

The community in the Nagoundal and Minim Martap areas of Cameroon have already benefited from this project, which is still in its early stages. Fourteen water wells have



been constructed, providing drinking water for about 20,000 residents.

**India:  
Raykal Project**

DUBAL has entered in to a joint venture with Larson & Tubro of India to develop a bauxite mine and alumina refinery in Orissa. The application for a mining license is progressing.

Community development activities in the project area include the provision of medical facilities and funds to aid local schools.

## Environment sustainability

DUBAL recognises that there is an inherently large environmental footprint associated with the production of primary aluminium since it is an energy-intensive process that also yields certain air emissions, solid waste and liquid waste.

We therefore endeavour to minimise the environmental impact of our operations wherever possible. Our main goal is to make the production process as efficient as we can so as to minimise the use of resources and control the release of pollutants into the environment.

We operate a BS EN ISO14001:2004 Environmental Management System (EMS), which ensures that our operations are aligned with the most stringent international environmental standards. A core feature of our EMS is the principle of continuous improvement, which has been maintained during the reporting period.

As shown on page 6, our achievements were acknowledged independently in 2009 through the award to DUBAL of three Emirates Energy Awards by DQG for services in energy conservation and sustainable development.

The key environmental parameters we monitor and manage are:

- Air emissions;
- Energy;
- Water;
- Waste;
- Raw materials; and
- Ecology.

Details of each environmental parameter are provided below, along with an assessment of our initiatives to minimise DUBAL's environmental

footprint and improve our performance in these areas.

### Air emissions

Air emissions are generated from a number of sources, most notably from power generation and the smelting process.

### Power generation

DUBAL generates power via an on-site combined cycle Power Plant. The burning of fossil fuels typically emits carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), sulphur dioxide (SO<sub>2</sub>), oxides of nitrogen (NO<sub>x</sub>) and particulate matter (most commonly respirable particulates, PM<sub>10</sub>). Other emissions, like ozone and volatile organic compounds, tend to be less significant.

The level of SO<sub>2</sub>, NO<sub>x</sub> and PM<sub>10</sub> emissions is related directly to the fuel type used to generate power. Gas-fired plants are less polluting than oil-fired or distillate-fired plants which are, in turn, less polluting than coal-fired Power Plants. Save in the event of shortage or emergencies, in which case DUBAL's plant would operate using fuel oil, the plant is operated on the "cleanest" type of fuel, natural gas — which contributes to reduced air emissions. We also deploy the best available technologies (such as low NO<sub>x</sub> burners) to further reduce air emissions during the power production process.

Ambient air quality is monitored continuously at strategically located stations around our Jebel Ali site. The results are analyzed at our on-site laboratory and interpreted by our environmental specialists.

Between 2007 and 2009, the volume of SO<sub>2</sub> emissions increased 5 per cent year-on-year due to a 7.4 per cent increase in production levels. However, the tonnage of SO<sub>2</sub> per tonne of aluminium produced decreased. This is mostly attributable to a decrease in distillate consumption as well as a decrease in the percentage of sulphur in the petroleum coke we purchased. Some SO<sub>2</sub> emissions also emanate directly from the smelting process.

The volume of our NO<sub>x</sub> emissions decreased year-on-year and, since 2007, has declined by 27 per cent. This is mostly due to higher machine availability and operational planning to rely more on the units which have low NO<sub>x</sub> burners.

Emissions of ozone-depleting substances through our power generation activities include minor amounts of refrigerant gases (commonly chlorofluorocarbons or CFCs). Over the years, we have taken several actions to eliminate our ozone-depleting emissions. As a result, the total CFC-11 equivalent emitted was limited to 0.11 metric tonnes in 2008 and 0.12 metric tonnes in 2009.



**Case study:**  
**Power outage incident**

In November 2008, while implementing a change to the electrical relay settings (to enhance the operational security of our power generation), a prolonged power outage occurred. This resulted in a substantial loss of power supply to our smelter operations, initially affecting 770 pots. The scale of the incident warranted the assembly of our Emergency Management Team, then the Crisis Management Team once it was recognised that there were continued issues in sustaining the potline operations. These teams, together with the incredible response from the staff critical to bringing operations back online, enabled DUBAL to recover fully within only a few months.

The power outage incident nevertheless resulted in a temporary increase in waste generation, PFC and particulate dust emissions as mentioned on page 24.

The greenhouse gas (GHG) emissions from our power generation activities are reported on below.

**Smelting**

Hydrogen fluoride (HF) is a gaseous emission that evolves from the electrolysis process. As this is a toxic substance, we apply very strict performance standards to DUBAL's HF emissions.

Despite this, our HF emissions increased over the reporting period. This was directly attributable to the re-starting of the potlines following the power outage incident in November 2008: HF emissions increased from the normal baseline of 0.55 kg/mt Al to 0.64 kg/mt Al over a period of four months.

In accordance with our policy of continual improvement, a Continuous Emissions Monitoring System (CEMS) is being installed on all our potlines. CEMS is a useful tool for gathering process emissions data for environmental compliance demonstration; and process control and optimisation. It also represents a proactive approach towards environmental protection

while manual sampling is reduced considerably.

The new CEMS will provide real-time data for HF roof emissions, allowing us to identify quickly and react to any deviations by making the necessary changes in the production process. We set HF roof emission limits in 2009. As these limits are reached, the CEMS triggers a series of strategically located red, yellow and green lights. The red light indicates that emissions are higher than our target; green indicates emissions are within the set limits; and yellow indicates that staff should be alert to higher emissions.

In addition, HF roof emission posters have been placed at high-traffic and high-visibility locations within the potlines and control rooms. The targets, with their respective colour indicators, are displayed on the posters.

Our aim is to reduce DUBAL's total fluoride emissions to less than 0.55 kg/mt Al. This forms part of our overall aim to minimise all our airborne emissions, particularly GHGs.

The smelting process also emits perfluorocarbon (PFC) gases during abnormal conditions of pot operation (known as anode effects). Two PFC compounds are released during anode effects, namely tetrafluoromethane (CF<sub>4</sub>) and hexafluoroethane (C<sub>2</sub>F<sub>6</sub>). These compounds have greenhouse gas warming potential that is 6,500 and 9,200 times greater than CO<sub>2</sub>. Accordingly, our PFC initiatives are dealt with under greenhouse gas emissions.

**Greenhouse gas emissions**

Greenhouse gases (GHGs) are generated by various sources in our operations, including:

- The power production process, which accounts for almost 80 per cent of our GHG emissions;
- The consumption of anodes during the aluminium reduction process;
- Perfluorocarbon (PFC) emissions arising from anode effects (AEs);
- Mobile sources (on-site transport and mobile plant equipment); and
- Other sources such as the consumption of natural gas in our Casthouse furnaces, baking kiln and rodding room.

Our total GHG emissions in 2008 and 2009 amounted to 7 million metric tonnes and 8 million metric tonnes of CO<sub>2eq</sub> in 2008 and 2009, respectively. The breakdown by source remained virtually unchanged year-on-year, as shown in Figure 4.

Anodes contain pitch and petroleum coke and are consumed during the electrolytic reduction process. The rate of anode consumption is higher during AEs, which also give rise to PFC emissions.

With regard to PFCs, DUBAL has initiated a programme to address our emission levels and register this as a Clean Development Mechanism (CDM) project. The primary objective of the programme is to decrease the number and duration of anode effects, thereby minimizing the

generation CF<sub>4</sub> and C<sub>2</sub>F<sub>6</sub> gases. Our approach will involve changing our alumina feeding strategy and we expect to achieve an annual reduction in GHG emissions of approximately 20,000 metric tonnes of CO<sub>2eq</sub>.

The programme reflects DUBAL's commitment to achieving the IAI's target of reducing PFC emissions by 80 per cent by 2010 and 93 per cent by 2020 (from 1990 levels). By 2008, we had achieved a 77 per cent reduction as confirmed by an IAI audit. However, the Potline re-start process following the power outage incident in November 2008 resulted in higher PFC emissions. In the four-month period immediate prior to the incident (July to October 2008), our PFC emissions averaged 0.04 kg/mt Al. This rose to 0.14 kg/t Al on average from November 2008 to February 2009; and resulted in our overall reduction in PFC emissions being limited to 67 per cent (compared to 1990). As the period from November 2008 and February 2009 was anomalous, we are confident DUBAL can achieve the 80 per cent reduction target by the end of 2010.

**Carbon management**

It is widely accepted that the most common GHG is CO<sub>2</sub>, which is therefore also the main cause of global warming and climate change.

Recognizing the importance of this issue, DUBAL in 2009 implemented a "2015 Carbon Management Strategy and Implementation Plan", which will help us reduce the size of our carbon footprint. The plan outlines how we will undertake programmes to raise awareness about climate change and carbon emissions; implement systems to measure our emissions; identify carbon reduction and abatement options; and continually improve our own carbon performance.

We intend to reduce carbon emissions from every aspect of our business and set quantifiable targets to measure our progress. Our 2010/2011

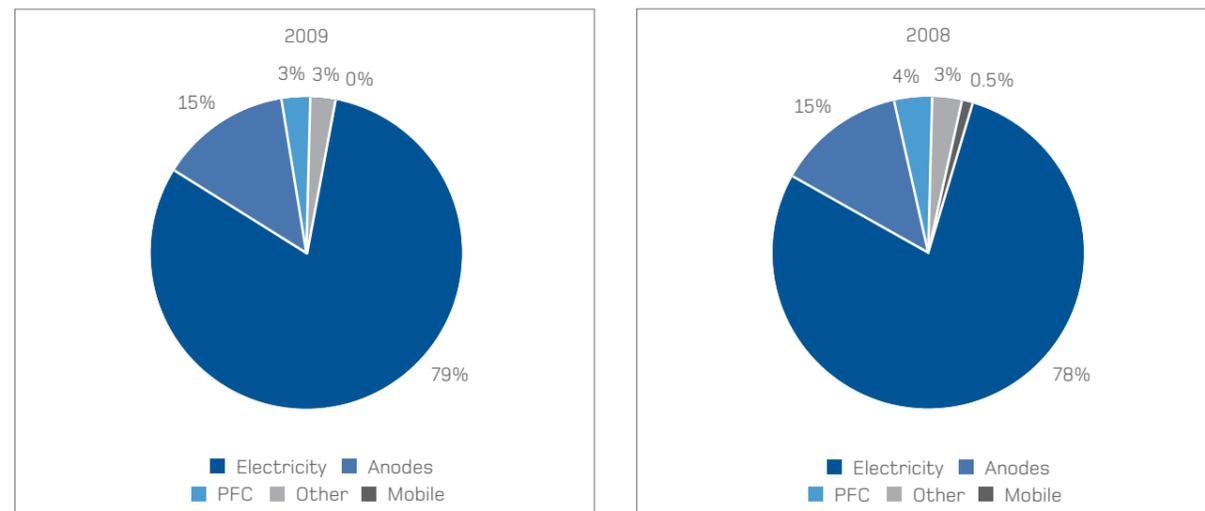


Figure 4: GHG emissions (CO<sub>2eq</sub>), 2008 and 2009.

**Case study:**  
**GT23 Project**

The GT23 project consists of one E-class gas turbine of type GT 13E2 from Alstom and one heat recovery steam generator (HRSG-X) that produces steam at double pressure levels.

By interconnecting the new plant with existing plants, namely CCPP16, CCPP18, CCPP20, ST1 and ST2, an increase in output can be achieved on the respective steam turbines, especially during outage of one of the 9E gas turbines in these blocks. The additional output from the new plant can be supplied to the Desalination Plant and used for water production, through ST1 and ST2, thus partially reducing the dependence on our 9B units.

This allows an increase in our installed power generation capacity, without the need for a cooling water source. Another benefit of this project is the improved generation efficiency, which leads to reduced fuel consumption and lower CO<sub>2</sub> and NO<sub>x</sub> emissions.

An initial study has shown that, with the assumed operation modes for the new GT23 cogeneration plant within the DUBAL Power Plant complex, the annual average generation efficiency can be improved from about 43 per cent to approximately 45 per cent. This means that our annual fuel consumption can be reduced by about 4 per cent under gas-firing operations.

Case study:

Reducing natural gas consumption in our Casthouse furnace

Our Casthouse operations have five melting furnaces, which are fed with natural gas as a fuel source. The furnaces have conventional cold air burners, which are used to melt cold/hot metal at a specified rate. The cold air burners work on the principle of an air-to-gas ratio with air and gas fed through on a proportionate basis. Aiming to reduce energy consumption, a new regenerative burner and an electromagnetic stirrer system were installed as a trial project in one of the melting furnaces during 2008/2009.

Through trial, gas consumption was reduced by 39 per cent in one of the Casthouse furnaces. A cost benefit analysis is being undertaken to determine whether this is viable for installation in the other four melting furnaces.

The project has also helped reduce the generation of dross, as outlined in the case study on page 32.

Sustainability Report will provide further details on our footprint, progress and plans for minimising our carbon footprint.

DUBAL has an agreement with MASDAR (Abu Dhabi's zero carbon, zero waste city) to seek opportunities to minimise the total GHG emissions from our potline operations' PFC Reduction Project. In addition, we will seek CDM credits for initiatives that further reduce our carbon footprint.

Energy

Power production

DUBAL is mostly self-sufficient when it comes to power production. Additional electricity is sourced, from time-to-time, from the adjacent Jebel Ali Power Plant that is operated by the Dubai Electricity and Water Authority (DEWA). There is a high voltage (HV) direct connection from the DEWA plant that allows electricity to be imported or exported based on supply and demand principles. Of the total energy consumed in the reporting period, less than half a per cent was sourced from DEWA.

During 2008, the average thermal efficiency of the DUBAL Power Plant exceeded 43 per cent, a small

improvement on our performance in 2007 (see Figure 5). This reflects the completion of a combined cycle project on one of our turbines. In a combined cycle Power Plant, electricity is generated in gas and steam turbines; then waste heat from the gas turbine is used to generate steam that powers the steam turbine. The thermal efficiency declined in 2009, due to the commissioning of another gas turbine on a co-generation cycle (GT23) (see case study on page 24).

The overall efficiency will increase further in 2010, reflecting the positive impact of the GT23 project. The new co-generation cycle will produce additional power from the existing steam turbines. The steam produced by the heat recovery steam generator (HRSG) will also be available for water production through our existing seawater Desalination Plant. Upon completion, the overall project will enable power generation efficiency of 45 per cent while offering the environmental benefit of reduced emissions.

Power consumption

The total energy consumption by DUBAL in 2008 was 155.3 million gigajoules (GJ), rising to 172.9 million GJ in 2009. However, an overall decline

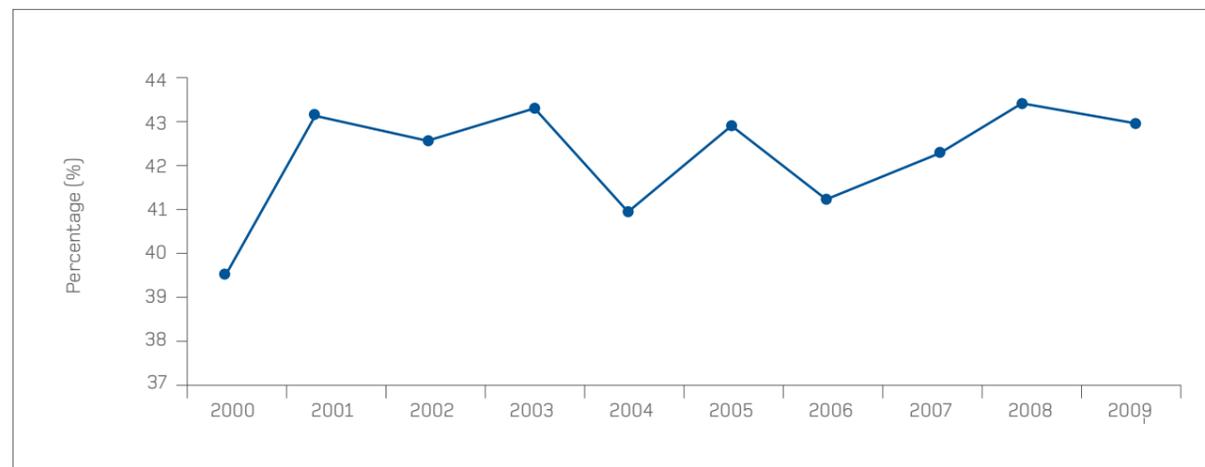


Figure 5: Thermal efficiency of the DUBAL Power Station, 2000 to 2009.

in energy consumption per tonne of aluminium produced has been achieved since 2000 (see Figure 6). While gas is the main source of fuel to generate electricity, additional sources include distillate as back-up fuel in case of shortages and anodes that are consumed in the electrolysis process.

As show in Figure 7, the proportion of energy consumed by electricity generation (gas) increased from 85.4 per cent in 2008 to 88.2 per cent in 2009, while electricity generation (distillate) dropped to 0.1 per cent. The proportional energy consumption by our smelter operations declined to

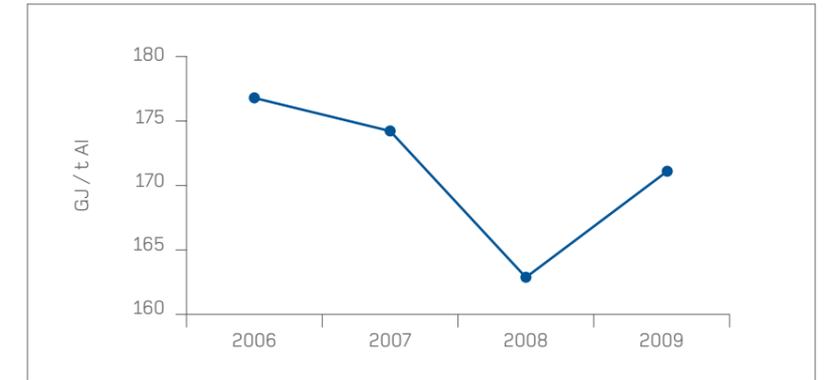


Figure 6: Total energy consumption at DUBAL, 2006 to 2009 (GJ/mt Al).

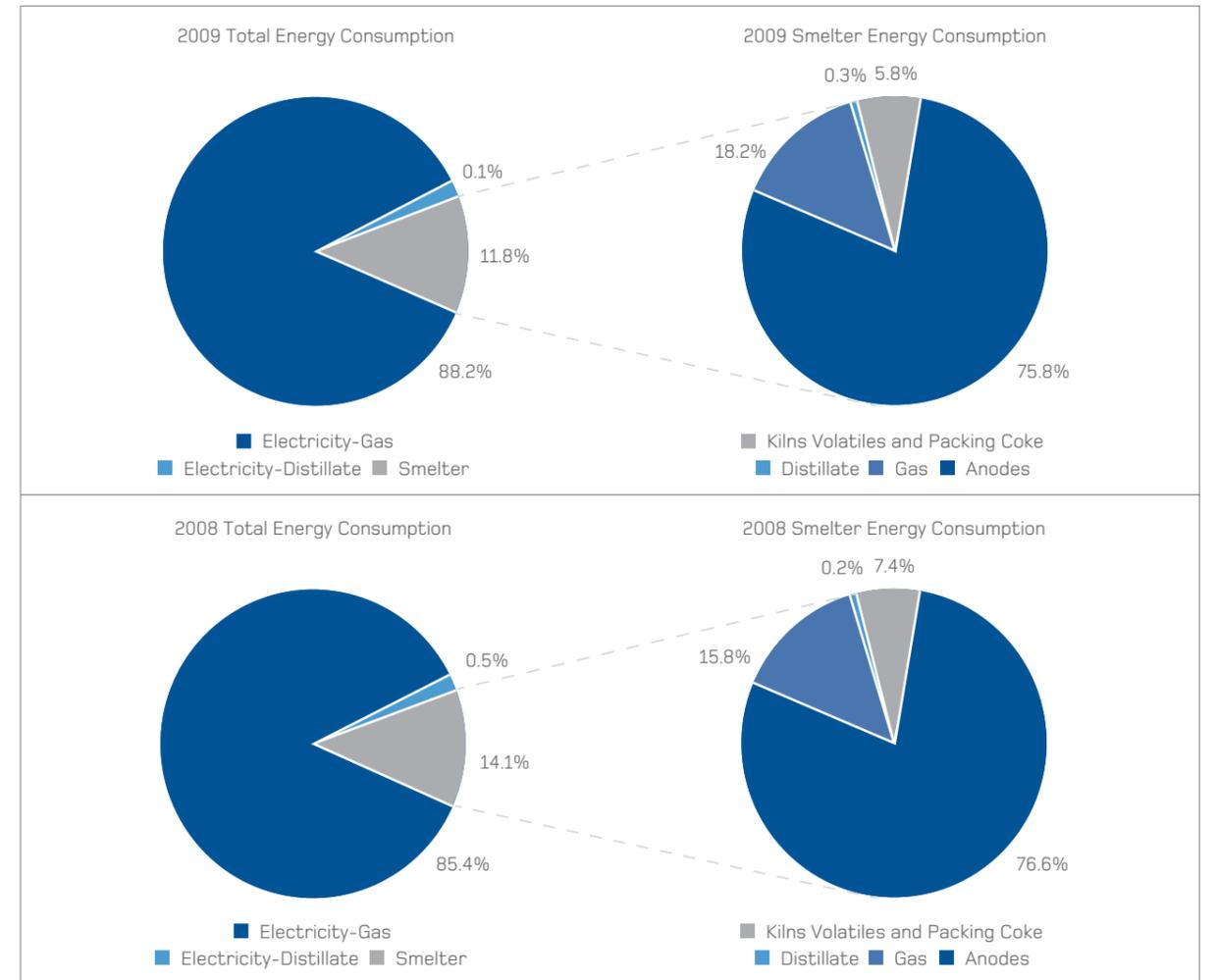


Figure 7: Energy consumption by source, 2008 and 2009

### Case study:

#### Evaporative Cooling

The gas turbine at our Power Plant is supplied with air at temperatures lower than the ambient conditions, even during peak summer periods. This is achieved via to an evaporative cooling (EC) system, where water is sprayed into the inlet air to remove latent heat from the air through EC. This process also increases the air density, which allows higher mass flow into the gas turbine inlet, in turn increasing the turbine's electrical output and thermal efficiency.

Historical data suggests that a 1°C increase in ambient temperature reduces the electrical output of the gas turbine combined cycle unit by about 1.0 MW. With the installation of evaporative coolers on the large combined cycle turbines, we have reduced the incoming air temperature by 5°C to 10°C on average. This has resulted in monthly savings of up to 79 MW during the summer months of 2009 and an average monthly saving over the entire year of 53 MW. Ultimately, the thermal efficiency gain from installing the evaporative cooler has ranged from 0.8 per cent to 1.6 per cent, depending on the operating conditions of the Power Plant.

This project was initiated in 2006 by equipping a single gas turbine with an EC system. During 2008 and 2009, a further eight gas turbines were modified, resulting in an estimated \$6.5 million in cost-savings and estimated reductions of 350,000 metric tonnes of CO<sub>2</sub> and 1,750 metric tonnes of NO<sub>x</sub>.

The same system will be implemented on a second gas turbine in 2010.

11.8 per cent over the same period (2008: 14.1 per cent). Within the smelter, the proportional consumption by gas rose to 18.2 per cent (2008: 15.8 per cent) while that for kilns decreased to 5.8 per cent (2008: 7.4 per cent), both as a result of the power outage incident in November 2008.

#### Energy-efficient technology

From our company's inception in 1979, DUBAL has been committed to continuous innovation in aluminium smelting so as to produce the world's best quality aluminium products, made to order and delivered direct to customers, while achieving maximum operating efficiencies. Substantial resources have been invested over the years in developing advanced electrolytic reduction cell technologies that not only increase productivity but also reduce the impact of our smelter operations on the environment through improved energy efficiency and minimised emission levels.

This has culminated most recently in DUBAL's proven, in-house developed DX Reduction Technology — a state-of-the-art, UAE flagship technology that performs among the most efficient reduction cell technologies currently available. Developed in 2006, DX Reduction Technology has been

implemented in a dedicated 40-cell Potline at our Jebel Ali smelter complex (which produced 40,995 metric tonnes of molten aluminium in 2009). The technology has also been licensed to EMAL Phase I.

Operating stably at 370 kA and above, DX Reduction Technology offers several operating benefits, notably:

- An energy-efficient design that enables specific energy consumption of 13.05 kWh/kg aluminium and 95.7 per cent current efficiency, which together contribute to energy conservation and associated operating cost reductions;
- Reduced environmental impact through lower fossil fuel consumption (a direct benefit of enhanced energy-efficiency) and reduced carbon consumption (anodes) of less than 0.408 kg C/kg Al;
- Reduced anode effects, resulting in reduced PFC emissions of less than 0.01 mt CO<sub>2eq</sub>/mt Al — a world-leading benchmark; and
- Productivity of 2.8 metric tonnes of aluminium per pot per day, at exceptionally high purity levels of better than 99.9 per cent — thus giving rapid returns on capital expenditure.

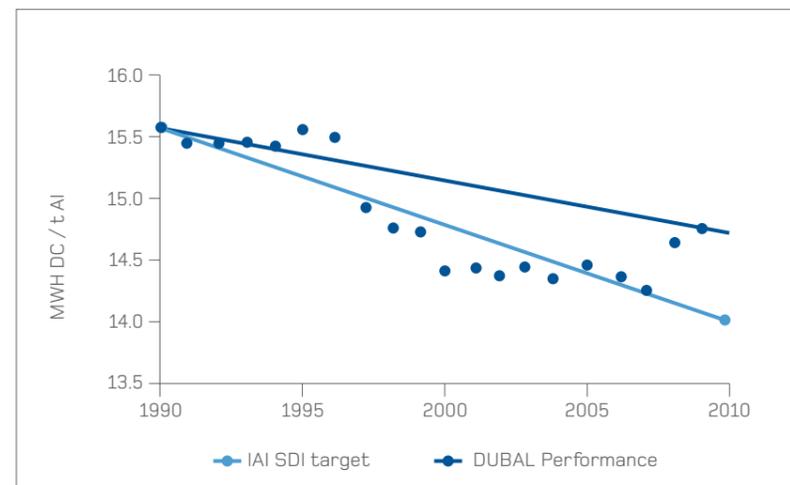


Figure 8: DC energy for electrolysis, 1990 to 2009 (DC MWh/mt Al).

### Case study:

#### Reducing use of compressed air

Compressed air supply is essential in the smelting process. This is because a vast quantity of dry air is required in the potlines for tapping molten metal, alumina unloading and conveying, crust breaking as well as in our instrumentation and maintenance workshops.

At DUBAL, the present air usage on the site is approximately 80,000 Nm<sup>3</sup>/hr. Compressed air is supplied throughout the plant via a complex set of system controls, from a variety of sources including stationary compressors and direct air bleeding from the compressor section of the gas turbines. An effective delivery system for the compressed air throughout the plant requires a significant quantity of energy. We have saved energy by reducing inefficiencies in the system via:

- An air leakage survey and repair programme;
- Increasing our stationary compressors;
- Reducing internal losses into the air; and
- Using high temperature silicon hose.

In 2009, our air usage declined by approximately 18 per cent to 725 m<sup>3</sup>/mt Al compared to 2008 (884 m<sup>3</sup>/mt Al). This reduced the power demand on site.

Moreover, the cost/metric tonne capacity to construct a smelter incorporating DX Reduction Technology is substantially lower than other technologies; while the construction period is also shorter. Dependability, prolonged pot life and improved workforce output further contribute to reduced operating expenditure and thus lower total cost of ownership. Taken together, these factors mean that DX Reduction Technology provides a truly sustainable solution.

#### DC energy for electrolysis

The IAI's target for the use of DC energy for electrolysis is a 10 per cent reduction (on 1990 levels) by 2010. DUBAL is committed to achieving this target. In 2009, the energy consumed in the smelting process was 14.7 DC MWh/t Al, down from 15.5 DC MWh/t Al in 1990, which is an overall reduction of 5.4 per cent (see Figure 8).

However, prior to the power outage incident in November 2008 and our full operational recovery in February 2009, our energy consumption levels had declined by 7.5 per cent compared to 1990. A return to these lower levels of DC consumption is expected in 2010. Our energy conservation initiatives are discussed further in the case studies on pages 25, 27 and 28.

#### Energy conservation

Conserving energy is a top priority at DUBAL and we constantly innovate to identify new opportunities. In the 2008/2009 period, our energy conservation initiatives included:

- Introducing new preventative maintenance procedures;
- Alternative anode sizes;
- New controls to anticipate and prevent anode effects;
- Installing evaporative cooling (EC) systems on several gas turbines (see page 27);
- Replacing the conventional burners with regenerative burners in one of the furnaces (and rolling the project

up as a potential CDM revenue generator; and

- Commissioning a new combined cycle turbine (see page 24)

#### Water

DUBAL is self-sufficient with regard to water supply; all our water needs being met through the processes of our on-site Desalination Plant. Seawater is pumped through a series of intake pipes and passes through a multi-stage filtration system. About 74 per cent of this filtered water is used for cooling purposes and in the steam turbines in the Power Plant, while the remaining 26 per cent is desalinated.

During 2008 and 2009, a total of 117,500 m<sup>3</sup> of water was abstracted per hour, of which 96 per cent was discharged back to the sea. Of the volume returned to the sea, 78 per cent was cooling water with the remainder comprising a brine discharge from the desalination process. The brine discharge is typically hotter and more saline than the surrounding seawater at the discharge point. To ameliorate this, the two discharge streams are combined, cooled and filtered before going back to the sea. Through rigorous testing and monitoring procedures, we ensure that the water we discharge to the sea is within prescribed environmental standards.

Our Desalination Plant produces potable water and distilled water. Table 3 summarises the production and consumption (external and internal) of desalinated water during the reporting period. Most of the distilled water we produce is used for industrial applications within DUBAL. In 2009, distilled water accounted for 7.63 per cent of production compared to 5.62 per cent in 2008. Conversely, potable water production accounted for 91.8 per cent in 2009 (2008: 94.4 per

cent), the decline reflecting reduced consumer demand during the economic crisis.

The majority of the potable water we produce is sold to external consumers (88.7 per cent in 2009; 91.2 per cent in 2008). This sweet water is either distributed through a water filling station or supplied to DEWA and adjacent industries through a series of pipelines. Internally, our primary use for potable water is on-site domestic purposes. The relative proportion of potable water consumption by end-user is depicted in Figure 9. The major share in both 2008 and 2009 was distributed through the water filling station.

In both October 2008 and September 2009, some groundwater sources were abstracted to cover an imbalance between demand and supply from the desalination process. Surveys were conducted to establish the viability of abstracting groundwater from five to six locations but only one location (close to our reservoir) had water of adequate quality for our production purposes. Based on the survey findings, we abstracted approximately 5,000 MIG/day.

**Water conservation**

We continually look for ways to reduce our water consumption and recycle water wherever possible. For example, the water tanker filling station has been re-engineered to capture spilled water, which is now used to irrigate the landscaped areas (20,588 square metres) within our site. Extensive use is also made of recycled grey water (treated sewage effluent from our on-site plant) to meet our irrigation needs. In this regard, improvements to the sewerage treatment plant operations yielded increased volumes of grey water in 2009 (73 per cent versus 57 per cent in 2008), effectively reducing DUBAL's reliance on potable water for irrigation purposes.

In some of our production processes, we reuse water in a closed-looped system to cool machinery and production lines. This uses the same quantity of water for repeated cycles, only taking in small quantities of top-up water periodically, when needed.

We have also implemented measures to prevent increases in

water consumption. For example, preventative maintenance helps minimise water wastage and losses; and our Desalination Plant has also installed additional flow meters in various areas throughout DUBAL to better manage our water consumption. Following the latter, we now report actual (rather than estimated) consumption, and flow restriction devices – such as low

Table 3: Water supply and consumption, 2006 to 2009 (million imperial gallons/day).

	Units	2006	2007	2008	2009
Potable water (external)	MIG/day	22.65	18.44	16.22	11.90
Distilled water (external)	MIG/day	0.39	0.41	0.39	0.44
<b>Total external supply</b>	<b>MIG/day</b>	<b>23.04</b>	<b>18.85</b>	<b>16.61</b>	<b>12.34</b>
Potable water (internal)	MIG/day	1.37	1.71	1.57	1.51
Distilled water (internal)	MIG/day	0.58	0.61	0.67	0.75
<b>Total internal consumption</b>	<b>MIG/day</b>	<b>1.95</b>	<b>2.32</b>	<b>2.24</b>	<b>2.26</b>
<b>Total potable water</b>	<b>MIG/day</b>	<b>24.02</b>	<b>20.15</b>	<b>17.79</b>	<b>13.41</b>
<b>Total distilled water</b>	<b>MIG/day</b>	<b>0.97</b>	<b>1.02</b>	<b>1.06</b>	<b>1.19</b>
<b>Total water production</b>	<b>MIG/day</b>	<b>24.99</b>	<b>21.17</b>	<b>18.85</b>	<b>14.60</b>

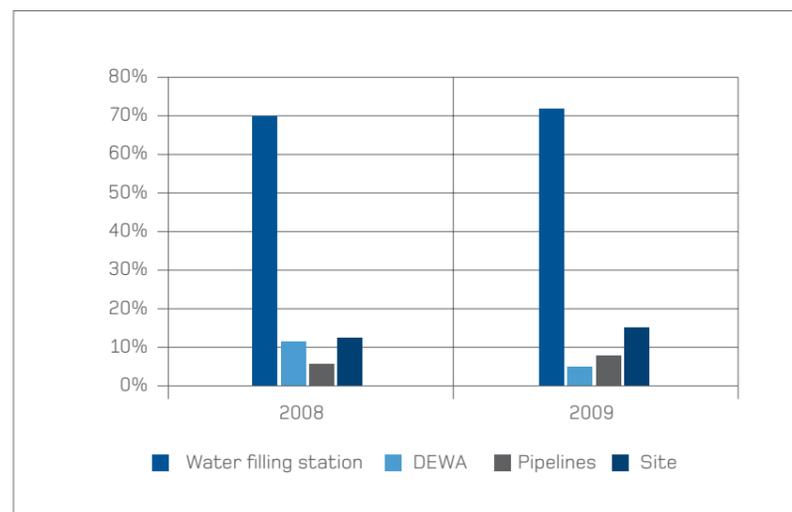


Figure 9: Proportional water consumption by end-user, 2008 and 2009.

flow taps and reduced flush toilets – have been installed in common areas.

**Water quality**

The quality of potable water produced by DUBAL complies both with the Dubai Municipality's standards and the drinking water quality guidelines published by the World Health Organization (WHO).

Our customers are provided with information related to water quality upon request. We use food-grade chemicals to ensure that the water desalinated at DUBAL meets the highest standards for public health and environmental protection.

**Waste**

**Waste generation**

The total quantity of waste generated from our operations was 322,439 metric tonnes in 2008 and rose to 332,369 metric tonnes in 2009. The types of waste we generate include:

- Spent pot lining (SPL) and spent anodes (the largest proportion of waste by weight);
- Dross metal;

- Scrap metal;
- Non-hazardous process waste (such as kiln bricks and slag); and
- Hazardous medical and liquid waste.

The volume of waste in 2008 was 17 per cent higher than in 2007, largely attributable to our anode waste more than doubling as a result of several potlines needing to be re-lined after the power outage incident in November 2008 (see page 23).

The quantities generated by our other waste streams either remained relatively steady or decreased over the same period. For example, the volume of hazardous medical waste decreased by 50 per cent between 2007 and 2009. This reflects the efforts of the DUBAL Medical Centre (DMC) to reduce the medical waste generated to less than 0.04 kg per visit.

No significant spills occurred at DUBAL during the reporting period.

**Waste recovery and recycling**

Our waste recovery and recycling activities led to the recovery of 86 per cent of the waste we generated in 2009, down marginally

**Case study: Improving water quality**

Recent research shows that when sterilisation agents (used to disinfect water for consumption purposes) are added to seawater, they may react with contaminants and pose a health risk from what the WHO calls "Disinfection By-Products (DBP)".

In 2006, DUBAL commissioned a plant that uses chlorine dioxide – a disinfectant that results in fewer DBPs – and is thus safer for human consumption. This is the first plant of its kind in the world. On average, we produced 1.54 MIG/day of distilled water using this new disinfection method in 2008 and 2009.

The new plant reflects our commitment to high quality standards as well as a safe and healthy environment.

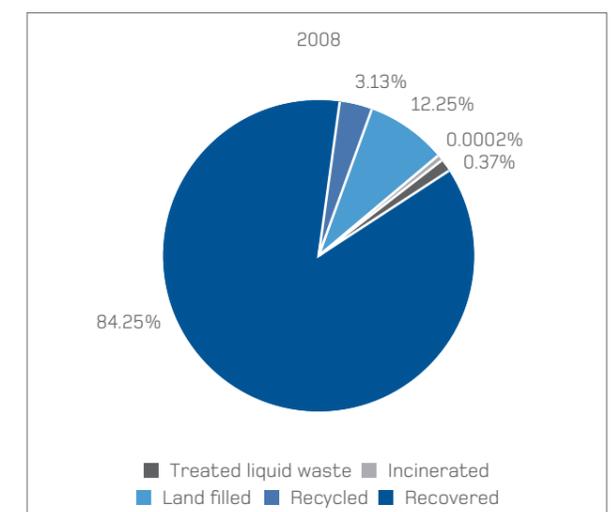
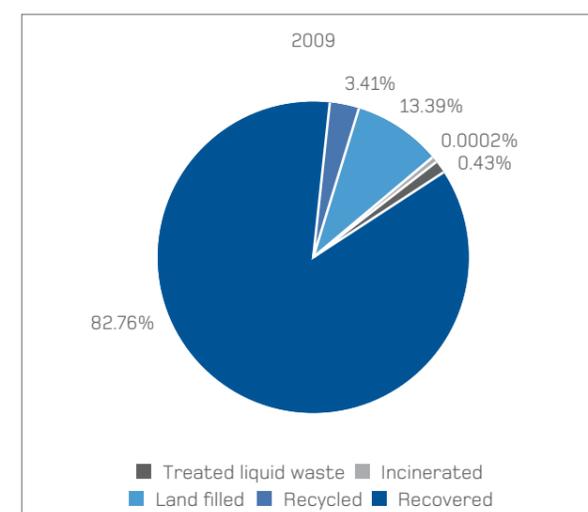


Figure 10: Waste disposal by method, 2008 and 2009.

**Case study:**

**SPL recycling**

One of DUBAL's strategic objectives is to eradicate land-filling of spent pot lining (SPL).

With this in mind, we investigated the viability of using SPL-refractory material as an alternative fuel and raw material (AFR) in the cement industry. Major cement industry players in the UAE were consulted, which led to the signature in January 2009 of a formal agreement with a cement company in the UAE to recycle the refractory material at its plant.

Strict compliance with regulations is required for recycling SPL, which is categorised as a hazardous waste by the authorities. A complete Environmental Impact Assessment (EIA) was performed and approved by the authorities in November 2009. Subsequently, a number of loads of refractory material have been shipped to cement company. This development has effectively diminished the need to send SPL to a hazardous waste site.

on the 87 per cent achieved in 2008 (see Figure 10). This high level of recovery is due partly to our practice of feeding certain "waste" materials back into the production process as raw material (including aluminium scrap, spent anodes and dross).

The waste from our waste streams is recycled, land-filled or treated on site. All our liquid waste is treated on-site and the sludge

residue is sent to a hazardous waste landfill site. The relative proportions of hazardous and non-hazardous waste generated each year from 2006 to 2009 are shown in Figure 11.

**Raw materials**

The main raw materials used in the production process include alumina (which is refined from bauxite), aluminium trifluoride

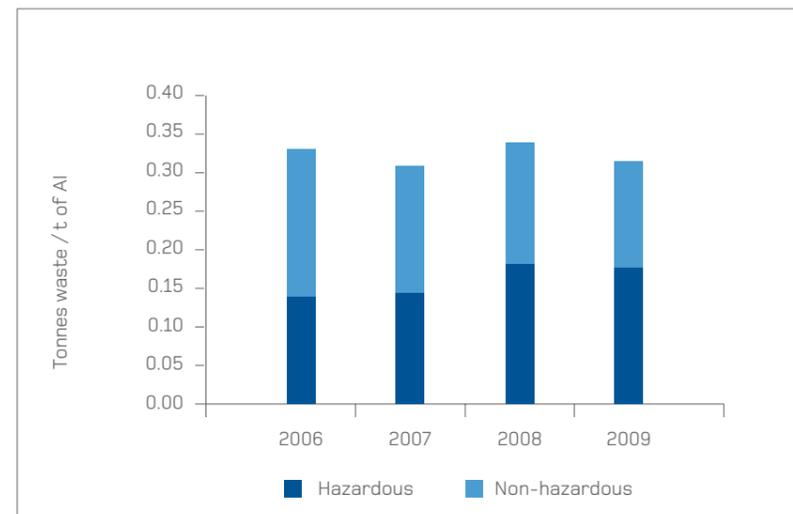


Figure 11: Relative proportions of hazardous and non-hazardous waste production, 2006 to 2009.

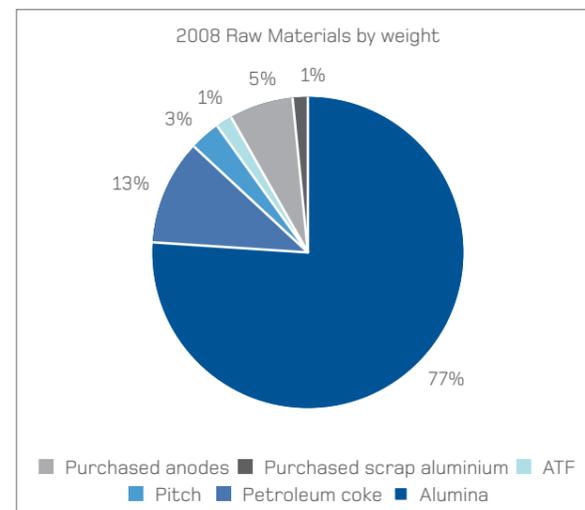
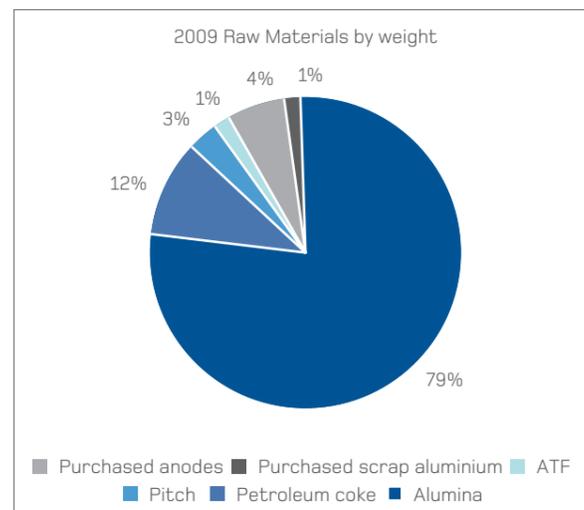


Figure 12: Proportional use of raw materials, 2008 and 2009 (per cent).

(AlF<sub>3</sub>), petroleum coke and pitch. The other two raw materials, water and energy, are covered on pages 25 and 30.

Through improvements in production efficiencies, the ratio of raw material input to aluminium produced improved from 2.34 metric tonnes in 2008 to 2.30 metric tonnes in 2009. This was achieved despite a 7 per cent increase in aluminium production over the same period. The raw material tonnages over the two years are shown in Table 4, while Figure 12 depicts the relative proportions. Alumina volumes increased marginally, from 77 per cent in 2008 to 79 per cent in 2009; while petroleum coke declined from 13- to 12 per cent and purchased anodes fell from 5- to 4 per cent, the latter reflecting higher anode production levels by our Reduction Materials department.

**Ecology**

The marine environment is the most sensitive ecological receptor in the vicinity of our site. The 20 square-kilometre Jebel Ali Wildlife Sanctuary is located approximately 7 km from our smelter operations. The coral communities in this conservation

site are considered the most diverse in the region and therefore of national ecological importance. An EIA undertaken at our operations found that the water discharged from DUBAL (brine after desalination) has localised impact and will not affect the sanctuary.

DUBAL will nevertheless continue to perform marine surveys, monitor site effluents, and utilise independent technical expertise to ensure that our operations have the least possible impact on the environment. Likewise, any site expansion plans and operational changes undergo thorough environmental reviews to comply with local regulations and to ensure that our environmental impacts are minimised.

Our site is immediately adjacent to several other major industrial corporations, such as the Jebel Ali Port, oil refineries and so forth. The combined impact of our operations on local plant and animal communities has left little natural habitat remaining. To redress the situation, DUBAL is actively pursuing opportunities to restore the habitat and create aesthetically pleasing boundaries to the site.

Table 4: Tonnage of raw materials used in 2008 and 2009 (mt).

Raw Material	2008 (mt)	2009 (mt)
Alumina	1,707,430	1,847,755
Petroleum coke	296,446	292,159
Pitch	69,899	68,606
ATF	13,010	13,062
Purchased anodes	114,978	83,183
Purchased scrap aluminium	12,683	13,287
<b>Total</b>	<b>2,201,764</b>	<b>2,304,766</b>

**Case study:**

**Reducing dross waste**

Aluminium dross is a by-product of processing aluminium in the casting operation. It consists mostly of aluminium metal, oxides and other non-metallic substances and forms when aluminium comes into contact with air. This occurs mainly while tapping the metal from the pot, transporting it from the potline to the casting operations and while treating the metal for sodium reduction. When the hot metal reaches the casting operations, dross is again generated during the pouring of aluminium into the furnaces, and during furnace mixing/stirring and skimming operations.

Dross is collected by manual skimming from the top of the furnace; then placed in purpose built pans and processed – it is sent to the dross plant where it is recovered using dross coolers to stop further dross formation, and a dross press machine to recover metal from the dross. Any recovered metal is recycled.

Dross generation can be reduced by limiting the extent of metal surface contact with the air as well as by maintaining circulation of metal in the furnace. DUBAL installed an electromagnetic stirring system at the bottom of a furnace to circulate the metal continually within the furnace, without opening the door, hence reducing air contact with the aluminium. A 4 per cent reduction in dross generation was achieved from this simple change in the process. The Casthouse team has also improved its skimming techniques to reduce dross generation further.

The electromagnetic stirring system also reduced natural gas consumption by the Casthouse furnace, as outlined in the case study on page 25.

#### Case study:

##### Marine ecological survey

Several red tide events have occurred along the Dubai coastline recently. This is a manifestation of algal bloom (a rapid increase or accumulation of algae in an aquatic system) — in the case of red tide, the bloom involves harmful algae and can therefore have large and varied impacts on marine ecosystems, depending on the species involved and the environment in which they are found.

To obtain a better understanding of the red tide events, we conducted a six-month marine ecological study in 2009 (April to September). The study was undertaken along the shoreline, close to the intake and outfall of our Power and Desalination Plants.

The findings indicated that increased development along the coastline is changing the conditions of the marine environment and that algae is more likely to bloom under these altered conditions — hence the red tides.

In light of the results, DUBAL has installed a real-time, marine monitoring system, which will allow us to monitor early indicators of red tides and notify local authorities. We are also considering additional measures to protect DUBAL's intake systems.

This includes a green belt concept whereby a vegetated buffer zone around the perimeter of our site has been developed and serves several purposes. The green belt comprises 1,545 specimens of a plant species that is fluoride-tolerant, yet sensitive to HF emissions, and therefore acts as type of “early warning system” on higher than expected emission levels. A vegetation study was conducted in 2009 to monitor the fluoride impact on the plants in our green belt and the results are awaited.



## Social sustainability

In 2009, DUBAL released our company's first formal Corporate Social Responsibility (CSR) policy and strategy. The policy is a major step forward for DUBAL in that it announces our social responsibilities and intentions to stakeholders, who will now be in a position to monitor us against our commitments.

The policy also puts our organization into the top-tier of organizations in the Middle East with regard to social responsibility as it helps fulfil our aim to adopt international best practice in every area of our business.

Moreover, the DUBAL CSR policy will help consolidate and strengthen our relationships with those stakeholders with whom we have a "social contract". Essentially a framework within which each stakeholder understands and respects the rules of engagement, the main objective of a social contract is to optimise the benefits of the relationship between DUBAL and the respective stakeholders involved in our business.

The primary stakeholders in our business, have been identified on the basis of the extent to which DUBAL's operations affect them; the impact they have on DUBAL's operations and economic growth; and the degree to which these stakeholders are able to contribute to the social, environmental and economic sustainability of Dubai. Accordingly, our primary stakeholders comprise:

- Our shareholders;
- The government of Dubai;
- Our customers;
- Our employees;
- Our suppliers; and
- The community.

A description of these stakeholders follows, with detail of how DUBAL interacts with each and their relative contribution to our company's social sustainability.

### Government of Dubai and shareholder

We interact with the government of Dubai in many different ways, each of which is detailed below:

- Our sole owner — The government of Dubai is the sole shareholder of DUBAL and our independent Unitary Board of Directors is appointed by Sheikh Mohammed Bin Rashid Al Maktoum, Vice President and Prime Minister of the United Arab Emirates and Ruler of Dubai.
- The Board of Directors — This body interfaces with the government of Dubai through the Chairman of the Board, His Highness Sheikh Hamdan Bin Rashid Al Maktoum. Our foremost responsibility to our shareholder is to deliver on-going value and financial return to the government of Dubai. We also act as a good ambassador for the Emirate of Dubai in the international markets where we operate.
- Supplier of natural gas — The Dubai Supply Authority (DUSUP) is currently the only supplier of natural gas in the Emirate of Dubai. Its two largest customers are the Dubai Electricity and

Water Authority (DEWA) and DUBAL.

- Operator of Jebel Ali Port — We import the majority of our raw materials and export our finished aluminium products through Jebel Ali Port, which is operated by DP World. DP World is 80 per cent indirectly owned by the government of Dubai through Dubai World, a holding company for a portfolio of businesses and projects for the Dubai government.
- Regulator — The government of Dubai acts as regulator for DUBAL's business and operations. For example, regular updates on labour legislation are sent to DUBAL. Naturally, our company is subject to environmental regulations passed by the Dubai Municipality, as well as at the UAE federal level by the Ministry of Environment & Water, that affect nearly every aspect of DUBAL's operations. We obtain environmental permits for water discharge and waste disposal are obtained from Dubai Municipality on an annual basis; and operate well within the permitted limits.

### Customers

Since our company's inception, our overriding aim has been to maintain long-term, sustainable relationships with our customers through continuing quality of our product and customer care programmes. This





approach has been rewarded by most of our customers remaining loyal to DUBAL over a long period of time.

We realise that, to sustain business success, we must ensure customer satisfaction. In this regard, DUBAL has initiated a number of processes with customers to ensure on-going dialogue. These processes fall into three broad categories: quality assurance and customer satisfaction surveys; delivering added-value products and services; and adhering to responsible production practices.

The process starts with developing agreements with customers regarding a product's technical specifications, to match their individual requirements. We provide all product specifications to customers at the time of order placement and provide quality assurance on each delivery. Each customer receives a certificate detailing the chemical

composition of the product, the absence of radioactive materials and confirming that the product is free of impurities.

Our aim is to exceed our customers' expectations at all times. We therefore provide our customers with numerous value-adding services, notably:

- Measuring the chemical and mechanical properties of our products;
- Advising customers on any root causes of defects in their systems;
- Providing initial training to some customers in the use of certain production processes, such as wheel casting extruding billets; and
- Having our technical experts provide learning seminars and share our wealth of product knowledge with our customers.

We also support our customers by adhering to their product requirements as well as the legal and statutory regulations of the country where they are based. We have not had any incidents of non-compliance with regulations or voluntary codes. We support our customers' interest in sourcing from ethically responsible and environmentally conscious businesses and are proud to be part of their sustainable supply chain.

We address each customer complaint and respond promptly and effectively. Each complaint is registered and thoroughly investigated by our Technical teams. A site visit is often undertaken to understand the cause of the complaint fully and to seek a solution. Where the complaint is validated, an agreed action plan is followed-up and signed-off by the President and CEO. Complaints are only closed-off after confirmation has been received from the customer that the issue has been dealt with to their satisfaction.

DUBAL has not had any complaints regarding breaches of our

customer's privacy or losses of customer data during the reporting period. No monetary fines have been levied as a result of non-compliance with laws and regulations concerning the provision and use of products and services. At present, we do not track the recycling or reuse of packaging materials, although efforts are made to use recycled products in our own operations.

DUBAL's presence at international exhibitions, trade fairs and seminars provides further opportunities for our employees to engage with customers on behalf of the company. We also keep in constant contact with our customers and continually share knowledge and ideas. Ongoing market research ensures that we keep pace with industry trends and developments to ensure our products remain cutting-edge.

DUBAL conducts regular customer satisfaction surveys and audits. We respond to the feedback received quickly and effectively to change our product specifications according to requests. Our annual customer satisfaction survey is instrumental in gauging the level of customer satisfaction and identifying areas for improvement in five key areas, namely: Product Quality; Packaging and Delivery; Shipping; Documentation; and Customer Service. The results of our customer satisfaction surveys confirm the high level of confidence that our customers have in the quality of our product. The 2008 survey results indicated a high level of customer satisfaction, with 64 per cent of customers rating DUBAL as excellent and 35 per cent as good. The results of our 2009 customer satisfaction survey were not available at the time of writing this report.

### Employees

Our people are our greatest asset and we therefore aim to give them a clean, safe and healthy working environment within which they can

fulfill their career aspirations. Accordingly, we offer competitive, market-related remuneration packages and place a great deal of emphasis on career development, skills transfer and training. We also continually improve our HR policies to align these with international labour practices. These efforts ensure that DUBAL is an employer of choice in the industry, as evidenced by our high staff retention rate and our ability to attract skilled staff from all over the world.

### Demographics

At the end of 2009, 3,933 people were in DUBAL's full-time employ. This, coupled with 131 temporary employees, brought the total staff complement to 4,064 — a decrease of 8.4 per cent compared to 2008 (4,438 people). Three main staff categories are in place (with the number of staff in each category in brackets): senior management, grades 19 and above (91); supervisory grades 11 to 17 (934); and non-supervisory grades 5 to 9 (2,908). At grades 5 and 6, our workforce comprises only male employees. We recruit female employees from grades 7 to 19, most of who work in administration and non-industrial departments.

As shown in Table 5, 3,696 of our full-time employees in 2009 were male and 237 female (compared to 4,034 and 227 respectively in 2008). The majority of our people (64.8 per cent) are in the 30- to 49-year-old age bracket. The proportion of female employees increased to 6.4 per cent in 2009 (2008: 5.6 per cent), with a converse decline in male representation, the trend reflecting the 2009 operational and manning requirements of the company.

DUBAL is firmly committed to the Emiratisation of our business, achieved through fostering local knowledge and talent. At the end of 2009, Emiratis comprised 22 per

cent of our workforce, up from 21 per cent in 2008. The majority of our Emirati employees are male (86.1 per cent). Our Board and Executive Committee comprise 100 per cent and 66 per cent UAE Nationals, respectively. Both structures are entirely male and the majority of members are aged 40- to 54-years-old.

In terms of diversity, our employees hail from 37 different countries, with the majority originating from India, Philippines and Pakistan. The proportional breakdown changed from 2008 to 2009, as shown in

Figure 13, with the relative number of Indian employees decreasing from 34 per cent to 32 per cent. The proportion of employees from the MENA Region and non-specified countries both increased by 1 per cent, reflecting our requirement for more professional positions than operational staff.

Currently, 53 per cent of our employees have worked at DUBAL for more than five years (see Figure 14). Of these, 27 per cent have been with our company for more than ten years (2008: 25 per cent) and 9 per cent have more than 20 years' service.

Table 5: Employee demographics at DUBAL, 2008 and 2009.

	December 2009	December 2008	Year-on-year variance
<b>Full-time Employees<sup>1</sup></b>	<b>3,933</b>	<b>4,261</b>	<b>- 7%</b>
<b>Temporary Employees</b>	<b>131</b>	<b>177</b>	<b>-26%</b>
<b>Category</b>			
<b>Senior Management</b>	<b>91</b>	<b>89</b>	<b>2.2%</b>
<b>Supervisory</b>	<b>934</b>	<b>935</b>	<b>-0.1%</b>
<b>Non-supervisory</b>	<b>2,908</b>	<b>3,237</b>	<b>-10.2%</b>
<b>Gender</b>			
<b>Female</b>	<b>237</b>	<b>227</b>	<b>0.77%</b>
<b>Male</b>	<b>3,696</b>	<b>4,034</b>	<b>-8.1%</b>
<b>Age (in years)</b>			
<b>Up to 25</b>	<b>6.4%</b>	<b>6.6%</b>	<b>-0.2%</b>
<b>26 to 29</b>	<b>17.5%</b>	<b>17.5%</b>	<b>0.0%</b>
<b>30 to 39</b>	<b>41.4%</b>	<b>42.2%</b>	<b>-0.8%</b>
<b>40 to 49</b>	<b>23.4%</b>	<b>22.9%</b>	<b>0.5%</b>
<b>50 to 54</b>	<b>6.7%</b>	<b>7.5%</b>	<b>-0.8%</b>
<b>55 to 59</b>	<b>4.5%</b>	<b>3.2%</b>	<b>1.3%</b>
<b>Above 60</b>	<b>0.1%</b>	<b>0.1%</b>	<b>0.0%</b>

<sup>1</sup>These figures include employees on contract in 2008 (95 employees) and 2009 (89 employees).



Our employee base remained stable during 2009, despite the difficult market conditions. Most employees who left DUBAL during the course of the year did so for personal reasons.

The staff turnover rates (due to resignations) in 2008 and 2009 (4.5 per cent and 5.2 per cent respectively) were higher than in 2007 (4.1 per cent). Male employees accounted for a higher proportion of the turnover in 2009 (88 per cent versus 80 per cent in 2008). A change also occurred in the turnover demographics by age: the proportion of 20- to 30-year-olds leaving DUBAL dropped from 44 per cent to 33 per cent year-on-year, while that for 51- to 60-year-olds declined from 6 per cent to 2 per cent. Conversely, the proportion of 31- to 40-year-olds leaving DUBAL increased from 36 per cent to 45 per cent year-on-year, while that for 41- to 50-year-olds rose from 14 per cent to 20 per cent.

**Employee benefits**

Most DUBAL employees are employed on a full-time basis, in terms of which they enjoy a variety of financial and non-financial benefits. Temporary employees comprise a very small percentage of our workforce, at 4.2 per cent and 3.3 per cent in 2008 and 2009, respectively. Such employees receive a specific rate as per their individual contractual agreements.

In addition to a basic salary, we provide housing to our permanent

employees and, where appropriate, a transport allowance. The value of these additional benefits depends on their individual circumstances as determined by our Human Resources (HR) policies.

Other allowances are granted according to the nature of work undertaken, the individual circumstances and legal entitlements of employees. Such allowances include:

- National allowance;
- Shift allowance;
- Technical allowance;
- Specific work allowance;
- Site allowance;
- High voltage allowance;
- Special allowance; and
- Children's education allowance.

As a caring and dependable employer committed to best practice in every area of our operations, DUBAL also provides other benefits for our workforce. These are based on eligibility criteria and individual circumstances and include:

- Paid sick leave;
- Annual leave;
- Leave travel allowance;
- Personal leave;

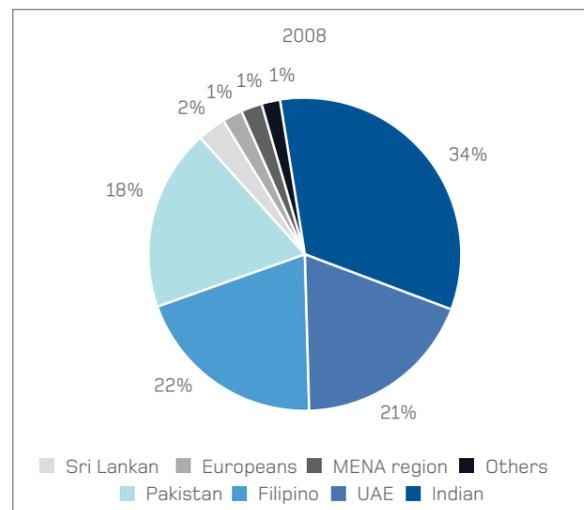
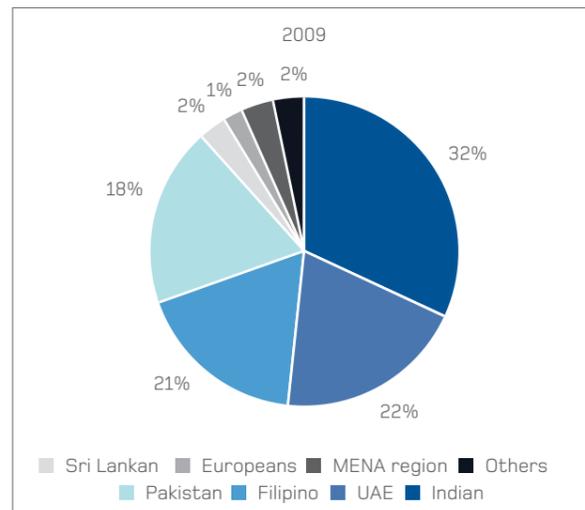


Figure 13: DUBAL demographics by nationality, 2008 and 2009.

- Compassionate leave;
- Maternity leave;
- Paternity leave;
- Hajj leave;
- Unpaid leave;
- Bereavement leave;
- Medical health insurance;
- Employee insurance; and
- Workman's compensation insurance.

Where our employees have to live away from their families for extended periods, we sponsor visas for their family members to visit them in Dubai. This facility is granted only for employees residing in our company's Residential Area. We also support employees who want to move their families to Dubai. In addition, we provide a Summer Training Programme for employees' children who may be interested in acquiring valuable work experience during their summer holidays.

Every two years, we conduct a survey on staff compensation and benefits. An international management consultancy benchmarks us against the salary standards of large organizations within the UAE and the Gulf. Based on the findings, we endeavour to provide competitive remuneration packages to our staff.

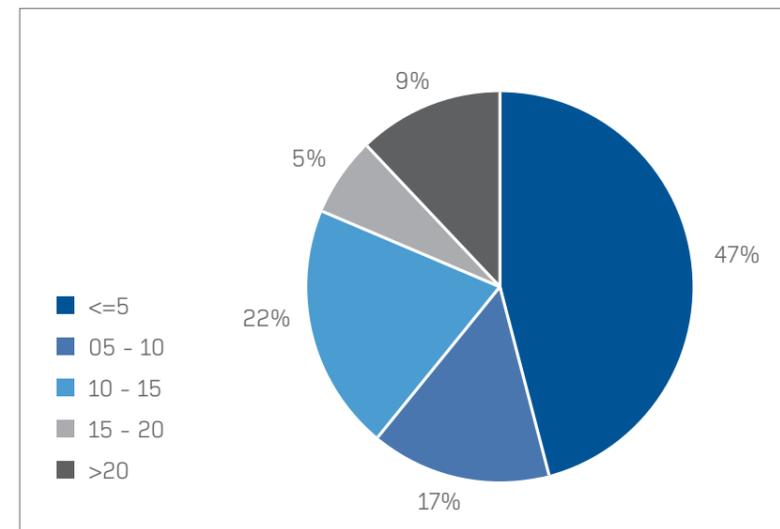


Figure 14: Proportional length of service in years, 2009.

Each pay grade at DUBAL has a salary scale with a minimum and maximum level, which is applied without discrimination by gender. To maintain our market position, we raised our minimum basic salary hiring rate from 75 per cent to 80 per cent band of the policy rate (i.e. the basic salary rate defined for each staff grade level) on 1 July 2008. The maximum rate was raised from 120 per cent to 135 per cent of the policy rate at the same time.

This change in policy has allowed employees who had not received a promotion to receive a higher salary package within their respective grades.

**Pension planning**

A pension benefit plan is provided for eligible employees. Our company contributes to the pension plan and accounts are held for the duration of an employee's service at DUBAL. The pension plan is in accordance with UAE National Pension and Social Security Law.

**Internal communications**

Collective bargaining is not permitted under UAE law. However, giving a free voice to our employees is part of our company ethos and integral to our

**Case study:**

**Voice Your Opinion**

Voice Your Opinion is our biennial employee satisfaction survey, the second survey having taken place in 2008. In total, 84 per cent of our employees participated and responded to questions on the following themes:

- Quality & Customer Focus;
- Strategy & Direction;
- Innovation;
- Tools, Equipment & Job-related information;
- Training;
- Safety & Environment;
- Job Satisfaction;
- Top Leadership;
- Work / Life Balance;
- General Satisfaction;
- Communication;
- Immediate Manager;
- Recognition;
- Facilities;
- Workload;
- Career Development;
- Compensation; and
- Structure.

The survey was conducted by an international management consultancy, and analysed using industry benchmarks. We ranked 6 per cent above the Global Industry Norm, 10 per cent above the Manufacturing Norm and on par with the High Performing Companies Norm.

The findings indicated that our key areas of strength relate to innovation, training, quality and customer satisfaction. The survey also identified some areas for improvement, including work-life balance, communication, career development opportunities and workload. Practical solutions were identified for these areas, action plans were implemented and progress on the same was reported to employees.

Our employees' opinions are valued and insightful, providing us with some good ideas to improve our performance. The next Voice Your Opinion survey is planned for the first quarter of 2011.

Case study:

Employee involvement

DUBAL has an active Business Excellence (BE) programme — a company-wide umbrella structure for all in-house improvement endeavours. This includes team-based projects and activities. One such initiative is our Employee Suggestion Scheme, which has been in operation since May 1981 and has won a number of international awards. In 2008 and 2009, winning ideas submitted to our Suggestion Scheme again received several international accolades from organizations like Ideas.Arabia, Ideas.UK, and the USA Employee Involvement Association.

By the end of 2009, the cumulative savings arising from implemented suggestions had reached almost AED 97 million over the 29 years of the scheme. During 2009 alone, 12,000 suggestions were submitted to the scheme, of which 9,500 were implemented and awarded, together giving an audited savings of AED 12 million. The scheme also achieved 100 per cent participation from eligible employees in 2009, for the fourth year in a row.

“social contract” with our employees. A number of communication channels have been initiated through which employees can raise grievances, suggest measures for improvement and express their satisfaction levels. Formal corporate communications channels also exist for disseminating information relating to the company, its policies and important developments.

In 2009, Human Resource Communication Meetings were introduced as a direct response to the findings of the company-wide Voice Your Opinion employee satisfaction survey, which identified communication as an area for improvement. These meetings serve to inform employees of any administrative or department-specific policy changes related to their area of work and have helped create a more transparent and interactive communication process. Areas of discussion have included annual leave, the quality of food at the canteens, use of our shuttle buses, changes in HR policies, updating employees regarding various company-related subjects, and so on. A total of 566 meetings were conducted during 2009: each department was visited two or three times during the year and we estimate that every employee participated in these meetings at least twice.

Recruiting, training and developing talent

We aim to attract and recruit a highly skilled workforce of motivated and loyal people. The recruitment of middle and senior management is undertaken through various channels, including in-house placements, recruitment agencies, public advertisements and headhunting. We also recruit UAE National graduates and young professionals through targeted programmes, namely our Graduate Trainee Programme; Scholarship Programme; Work Placement Programme; Summer Programme; and Pre-employment Course (PEC) Programmes. Non-supervisory employees are recruited through

DUBAL’s bank of curriculum vitae, career fairs, referrals or as walk-in applicants.

To retain talented individuals, we are also committed to the career development of our employees. Our structured performance management and appraisal framework, used for all levels of staff, helps identify individual training needs.

Every year, all employees develop individual performance agreements in which their objectives and competencies are recorded, so that their line manager can monitor their progress. A mid-year review ensures that the employee is making progress towards his or her goals; while an end-of-year review evaluates the individual’s performance for merit increase and possible bonus, plus promotion on the basis of ability, talent and attitude. In 2009, more than 99 per cent of our employees underwent performance reviews (2008: 95 per cent).

As in prior years, our company invested substantially throughout the reporting period in training and development initiatives designed to provide employees with the skills required to perform their tasks effectively, while facilitating personal growth. Extensive learning opportunities are offered to our employees, thereby increasing their knowledge, expertise and professionalism. Our Training and Development department co-ordinates a broad range of technical and competency development programmes as well as on-the-job training courses. Courses on environmental, health, safety, quality management and assurance are offered throughout the year as are classes that teach English.

The DUBAL Training Centre (DTC) is complemented by satellite training centres located throughout the plant. The DTC focuses on the delivery of our PEC programmes to UAE Nationals joining our company. These training courses equip UAE high school graduates to become

maintenance craftsmen and smelter, desalination plant and power station operators through a combination of classroom-based and on-the-job training. UAE Nationals may also avail our Summer Training Programme, Graduate Training Programme, and our Scholarship Programme that support higher learning. Depending on their performance, trainees and graduates are offered employment at DUBAL. More than 60 per cent of individuals engaged through these programmes remain within our company for more than ten years. On average, 10 per cent of our employees at management level were originally recruited through the Graduate Training Programme.

Certified by the UK-based Institute of Leadership and Management (ILM), the DTC also offers structured, ILM-accredited management development programmes for first line supervisors and middle managers; and workshops designed to impart basic life coaching and effective communication skills. In addition, our senior management employees are given training opportunities at recognised international business schools including

INSEAD in France, IMD in Switzerland and through Ashridge Business School, UK. Employees also have access to an Open Learning Unit that enables them to obtain qualifications in technical subjects while holding down full-time positions within the company; and diverse e-Learning opportunities.

An Accelerated Development Pool Programme is in place, which identifies potential candidates for advancement and grooms them for middle and senior management roles. Individuals chosen for the Development Pool Programme attend training and focused workshops to develop leadership qualities and team-building skills.

A significant notice period is provided to any employee who may be required to move to a different team and/or department. DUBAL policy precludes making any amendments to any employee’s contract without their full consent.

Cultural sensitivity and human rights

We are proud of the cultural and social diversity at DUBAL



Table 6: Cultural diversity training initiatives, 2008 and 2009.

Year	Course / Programme Title	No. of courses held	Percentage employees trained
2008	The Challenges of Communication in a Multi-Cultural Environment – Middle Management Skills Workshop	2	0.70
2008	Communication in Multi-National Teams – DUBAL First Line Management Course Level III	1	0.30
2008	DUBAL Cultural Awareness – Induction Course – New course introduced in November 2008	2	3.21
2009	The Challenges of Communication in a Multi-Cultural Environment – Middle Management Skills Workshop	2	0.83
2009	Communication in Multi-National Teams – DUBAL First Line Management Course Level III	1	0.35
2009	DUBAL Cultural Awareness – Induction Course	9	9.10
2009	Jigsaw @ Work	6	2.59

Case study:

Encouraging safe behaviour

Good safety performance and a culture of caring employees are vital ingredients for DUBAL to become one of the world's top five aluminium smelters. With this objective in mind, a unique Behavioural Safety System — called Tamahal — was launched in Potlines 5 and 6 during October 2008, then re-launched there in March 2009. The Rodding department also embraced Tamahal in February 2009. The primary objective for Tamahal in 2009 was to roll the concept out across our Jebel Ali site. Diverse platforms were used, including:

- Awareness sessions;
- Formal training sessions;
- Coaching and mentoring;
- Feedback meetings;
- Recognition and awards for high-quality observations; and
- Articles in our in-house employee magazine, Imtiaz.

Tamahal involves a psychological process targeting basic employee needs, while emphasising the importance of safe behaviour. To obtain the most positive results, employees are engaged and consulted. Where improvements are possible, employees are coached, thus enabling them to provide the ultimate solution. The system is observation-based, and involves trained observers following several defined steps.

By the end of December 2009, we had accumulated sufficient quality observations for meaningful analysis, which will enable us to identify our strengths and focus on our vulnerabilities

Table 7: Safety Training Programme courses offered in 2008 and 2009.

Safety Training Programme courses – 2008 and 2009	
• Safety Management	• Gas & Atmospheric Testing Authorisation
• Hazardous Chemical substances	• Basic Environmental Awareness
• Hazardous Identification and Reporting	• PTW Receiving Authority
• Safe Manual Operations	• Supervisor Behaviour Based Safety
• Basic OHS Knowledge	• EHS Rep Training
• PPE Management	• Confined Space Training
• Lifting Equipment and Operations	• Defensive Driving
• Risk Assessment and Analysis	• Hand Tools
• Incident Investigation and Reporting	• Occupational Health and Hygiene
• Safety Inspections and Principles	• Ladder Safety
• Office Safety and Ergonomics	• Machine Guarding
• Hot Work Operations	• Permit-To-Work Issuing Authority
• Warehouse Operations Training	

(see pages 38 and 39) and have not received any reports of discrimination among our employees.

During our induction process, employees are made aware of the different etiquettes, behaviours and attitudes of people coming from a wide range of cultural backgrounds. The history and traditions of our Emirati society are also discussed and this helps expatriate employees settle in and learn more about their new professional environment.

We promote respect for human rights. As a measure of our commitment, our employees participate in development programmes that increase their own understanding of human rights, communication skills and cultural issues. Table 6 summarises the courses offered to our employees in this area during 2008 and 2009.

Health and safety

We firmly believe that safety at the workplace is everyone's responsibility. We therefore work collaboratively across different teams to ensure

that this goal is achieved. Our Quality, Environment, Health and Safety Policy sets out our shared responsibilities and commitment to work towards the safety and health of our employees.

We have trained and appointed 150 Environmental, Health and Safety (EHS) representatives, which effectively cover 100 per cent of our workforce. Two EHS representatives are appointed per shift in operations and one for other areas of the business. Of these representatives, 25 are involved in the plant-wide EHS Representatives Meeting, held on a monthly basis with the Safety Team. These 25 representatives are also responsible for meeting with departmental managers and holding regular meetings with them to discuss issues and report on progress.

In addition, we have developed a Safety Training Programme, which provides comprehensive information on Occupational Health & Hygiene (OHH) and safety topics. It also highlights issues to raise awareness among our employees. We have developed a safety training matrix that identifies

generic and specialised training needs for all employees, based on job grades and tasks that each employee undertakes. Visitors and contractors are also given an induction on our safety practices.

Our Safety Training Programme comprises over 20 courses, and in 2009 a total of 1,822 employees attended training. The full list of courses offered in terms of the Safety Training Programme in 2008 and 2009 is listed in Table 7.

The total number of lost work days at DUBAL has decreased significantly since 2006, when 473 days were recorded. The number declined to 121 and 55 lost workdays respectively in 2008 and 2009. This reflects the effectiveness of our OHH and Safety Programmes: together, they have created greater awareness of occupational health and safety issues while encouraging behavioural changes at the workplace.

From a safety perspective, DUBAL consistently strives for a lost-time injury frequency rate (LTIFR) and fatal injury frequency rate (FIFR) of zero (measured per million man-hours). While not yet achieved, these targets remain non-negotiable and have resulted in an overall

improvement in our company's safety performance over the years: the Total Recordable Injury Frequency Rate (TRIFR, comprising lost time injuries, restricted work and medical treatments per million man-hours) has declined from 13.12 in 2004 to 5.65 in 2008 and 4.27 in 2009. Overall, a 96 per cent drop in LTIs has been achieved since 1997 (see Figure 15).

When injuries do occur, we implement measures to avoid similar occurrences in the future. We aim to reduce the injury rate at DUBAL even further in 2010.

There are several inherent health and safety risks associated with the aluminium industry. These risks need to be managed actively to protect our employees and contractors. To this end, the OHH department and DUBAL Medical Centre (DMC) have jointly implemented a comprehensive OHH Programme at DUBAL, including thorough assessment and monitoring of our core industrial and business processes with the overall aim of achieving a state of zero harm to people.

By design, our OHH Programme detects the earliest signs of any occupation-related health illnesses and injuries. Special emphasis is placed on monitoring the health of

employees exposed to noise, heat and chemicals (such as HF). We respond to any health-related issues detected by placing affected employees immediately into a rehabilitation and recovery programme that is tailored to their needs. The OHH Programme also helps us identify, investigate, diagnose, report and manage occupational health illnesses to facilitate the recovery of an employee.

In the 2008/2009 period, over 4,000 employee visits took place under the OHH Programme.

Since 2000, DUBAL has actively worked to reduce the number of lost working days due to heat rash and heat stress cases within our workforce. The initiative has gained additional emphasis since 2006 through the dedicated "Beat the Heat" campaign, the impact of which is highlighted in Figure 16. During the review period, the campaign continued to deliver excellent results: zero lost days as a result of heat rash were recorded in both 2008 and 2009 (i.e. the second and third consecutive years); as were zero lost days as a result of heat stress (i.e. for the third and fourth consecutive years).

To improve the health of our employees and create greater awareness of health-related illnesses,

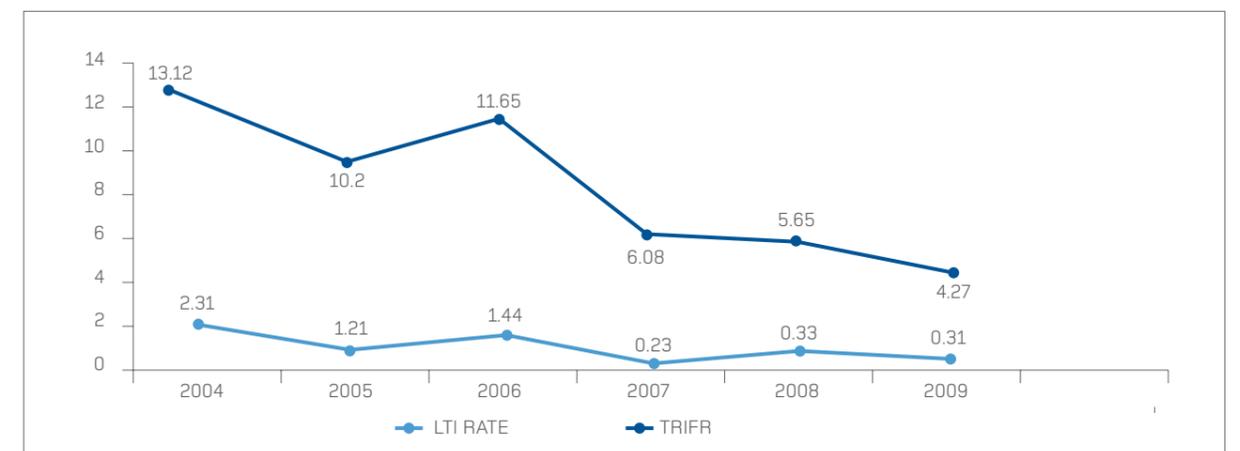


Figure 15: Lost Time and Total Recordable Injury Frequency Rates at DUBAL, 2004 to 2009.



factors leading to some of the most common chronic illnesses. The activities coincided with regional and international events, such as World Diabetes Day, Anti-Tobacco Day and Breast Cancer Month. A number of other health-related seminars and campaigns were also held during 2009 (such as swine influenza, HIV/AIDS and metabolic syndrome). Overall, these events helped educate attendees on these health issues and provided valuable information on both preventative measures and treatment modalities.



On an ongoing basis, DMC provides primary healthcare services to manage and treat acute and chronic medical conditions. In 2008 and 2009, the average attendance at DMC was 30,000 visitors per year.

These and other initiatives contributed to DUBAL being certified to the new OHSAS 18001:2007 Health and Safety Management System in 2009.

**Living at DUBAL**

The majority of our non-supervisory employees benefit from the residential facilities and communal amenities within the DUBAL complex, where we have created an environment where our people can live, work and enjoy a high standard of living.

Our resident employees enjoy physical activity and a healthy lifestyle within the Residential Area. The sport facilities cater for cricket, basketball, hockey, football and a general fitness centre. A number of clubs — notably music, yoga, artwork and chess — have been formed where employees socialise with people from other cultural backgrounds.

Our dining areas provide a highly nutritional diet to our employees based on the professional recommendations of the DMC and an employee-managed food committee. A wide range of specialty foods is offered, reflecting our employees' diverse national and ethnic origins.

Other on-site services include access to ATM machines, postal services, places of worship and a small grocery outlet. In addition, our residents are provided shuttle bus services for easy access to other areas in Dubai.

**Suppliers**

We engage a wide range of suppliers, both strategic and non-strategic. Strategic Materials suppliers are companies that provide DUBAL with key raw materials used in the production of aluminium. We have 120 suppliers of Strategic Materials, all based outside the UAE. In both

the DMC and the OHH department in 2009 engaged in a programme to motivate employees to take personal ownership of their well-being. The programme involved informational workshops and sessions on avoiding sickness and controlling the risk

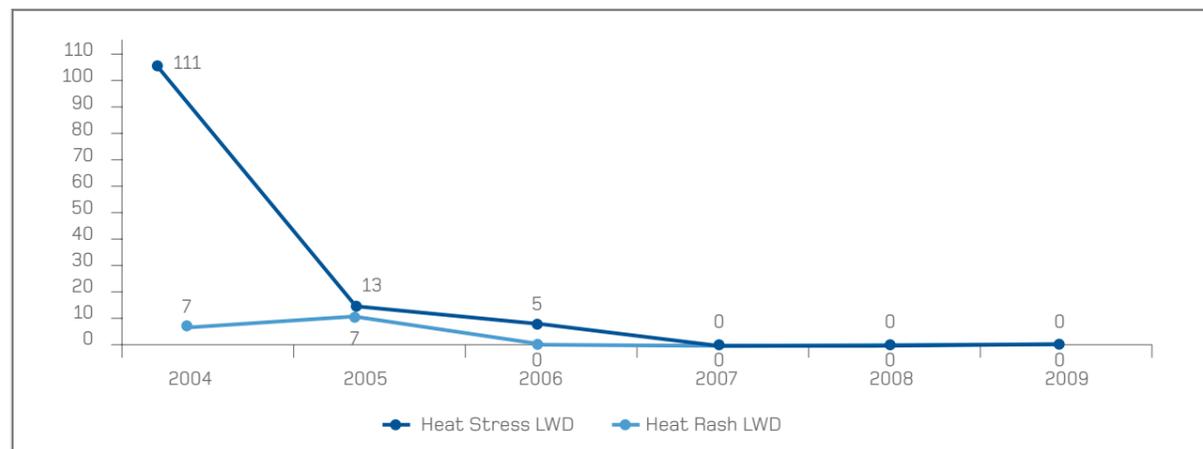


Figure 16: Lost working days due to heat stress and heat rash, 2004 to 2009.

2008 and 2009, the majority of our raw materials were procured from Asia (39 per cent), followed by Europe (36 per cent) — the latter being up from 35 per cent in 2008.

We also have approximately 5,000 suppliers of General Materials/ Services. These non-strategic suppliers comprise organizations that provide all goods and services other than raw materials and most are based in Dubai. Figure 17 illustrates the relative make-up of our non-strategic suppliers in 2008 and 2009.

**Responsible Supply Chain management**

We encourage sustainability performance among the stakeholders involved in our business. This is particularly true of our suppliers, where we encourage our suppliers to improve their environmental stewardship and social responsibility. Our sourcing policy reinforces this, as we only purchase materials and goods from organizations with a good environmental and social performance track record.

All suppliers are required to complete a Vendor Assessment Form. This ensures that appropriate quality assurance, environmental

protection, waste management and occupational health and safety systems are in place in the supplier organization.

We strongly encourage all of our suppliers to obtain international certifications (ISO certification or an equivalent standard) for environmental and social standards. In 2008 and 2009, almost 70 per cent of our Strategic Materials suppliers held one or more certification against an internationally recognised standard and 61 per cent of our expenditure (by volume) was procured from these suppliers.

DUBAL does not do business with any suppliers engaged in child labour

**Supply Chain verification**

We use a Material Assessment Form to ensure that our suppliers provide materials that are high quality, safe to handle and free of hazardous risks. All 120 of our active Strategic Materials suppliers adhere to our criteria for selection, based on our anti-child labour policy and material assessment.

A screening process is applied to all potential suppliers to assess their

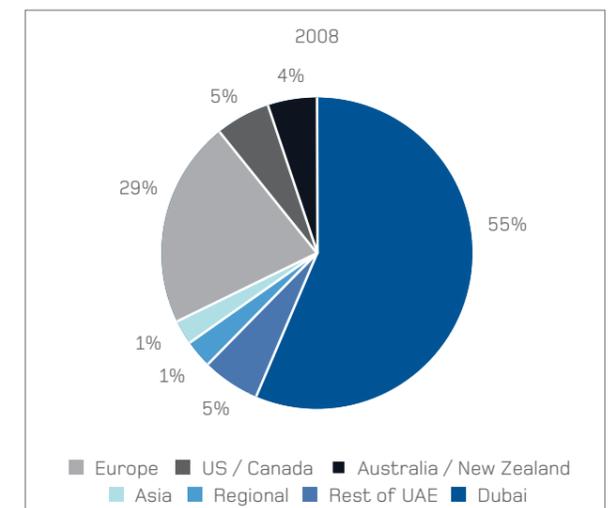
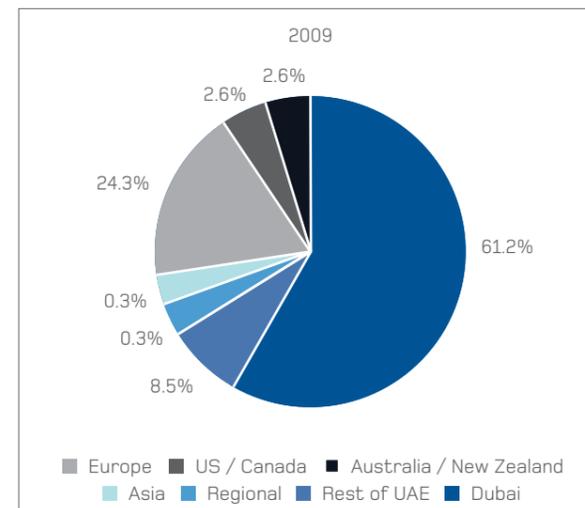


Figure 17: Breakdown of non-strategic suppliers to DUBAL by region, 2008 and 2009.

**Case study: Break the silence**

In April 2009, DUBAL hosted an autism awareness campaign to raise awareness of autism, raise funds and encourage volunteer support for the Dubai Autism Center (DAC). The campaign coincided with DAC's annual Autism Month, and was supported by DAC through awareness sessions and a quiz for employees.

In addition, paintings done by children with autism were offered for sale within DUBAL, donation boxes were placed in various departments and a raffle-based competition was held. Together, these activities raised a total of US\$8,399 for DAC. The contributions from employees far exceeded expectations and our effort was greatly appreciated by DAC and our employees alike. Employees with autistic children were particularly appreciative of the campaign's messages and have encouraged continued support for this cause.

Case study:

You can make a difference

As a corporate member of Emirates Environment Group (EEG) and in line with our commitments to mitigate our impact on the natural world, DUBAL participated in the 2009 EEG Can Collection Campaign — an UAE-wide initiative that encourages recycling of aluminium drink cans.

Employees were asked to collect cans from their homes, friends and relatives and even restaurants, for the purposes of recycling. Can collection bins were placed across our Jebel Ali site in convenient and readily accessible locations. Information was shared on the purpose of the campaign through posters, articles in our in-house employee magazine (Imtiaz) and a quiz-based competition.

A large number of our employees took part in the campaign and, in just six weeks, we collected 2,836 cans — the equivalent of nearly 50 kg of aluminium. Through the campaign, our employees came to realise that everyone “can” make a difference! A culture of recycling aluminium cans was also initiated in the process, which has been sustained through the permanent placement of can collection bins within our premises.

Table 8: Community investment at DUBAL, 2008 and 2009

Community investment		2009	2008
Education and training	US\$ '000	167	516
Environment	US\$ '000	18	152
Charity	US\$ '000	42	236
Sport	US\$ '000	677	916
Other charity	US\$ '000	197	74
<b>TOTALS</b>	<b>US\$ '000</b>	<b>1,101</b>	<b>1,894</b>

ability to meet our requirements under their self-reported Quality, Health, Safety and Environment systems. Our pre-approval audit process, conducted through a site visit and supplier assessment, gives suppliers recommendations on the measures required to comply with our sourcing policy.

In 2008, we conducted our biennial Supplier Satisfaction Survey. Every year we undertake up to twelve audits on active, non-strategic General Materials/Services suppliers to ensure complete compliance with our sourcing policy. We completed eleven such audits in 2008 and nine in 2009. The audit criteria are based on the criticality of the product and the quality of the material supplied.

As part of continuously improving our internal processes, we implemented an electronic invoicing programme in 2009, which has increased the efficiency of our invoicing system. Suppliers are now able to submit invoices electronically, then track and check processing progress until the payment is released to their accounts.

Community

We are aware that DUBAL's actions influence different parts of the community in different ways. We are also aware that our relationship with the community

needs to be long-term, sustainable and mutually beneficial if our company is to successfully cohabit with the community and continue to make a positive contribution to the lives of the people with whom we interact.

We therefore endeavour to be a good corporate citizen and a role model for care and responsibility by actively supporting initiatives and projects that promote the socio-economic growth of Dubai, thus benefiting the cosmopolitan population of the Emirate. Preference is given to activities that endorse the broader goals of the Dubai government and to causes that will benefit most through our involvement. Our support comprises financial and in-kind assistance as well as contributing our time, expertise and patronage to events in the community in four main areas of activity:

- **Economic:** We support the economy through direct and indirect financial contributions, with associated benefits for the community.
- **Social:** We aim to improve living conditions and create opportunities for underprivileged and disadvantaged members of society.
- **Environment:** We strive to preserve precious natural resources and act responsibly so as to protect the environment.

- **Workplace:** We encourage individual development and diversity amongst employees. We encourage our employees to be socially responsible and proactively support socially responsible behaviour.

In many cases, we work with well-established and reputable partners such as educational institutes, non-governmental and community organizations, and other ethically responsible businesses to maximise our reach and impact. For example, DUBAL recently joined ENGAGE Dubai — an initiative of the Dubai Chamber of Commerce's Centre for Responsible Business that is dedicated to creating awareness and raising funds for worthy causes in Dubai through the involvement of corporations, specifically through volunteer support by the member companies' employees. ENGAGE Dubai also facilitates in-depth research into and understanding of the community's needs, enabling member companies to create awareness of the real social issues and develop goal-focused programmes with positive outcomes.

As detailed in Table 8, our community investment in 2008 to 2009 totaled US\$ 2,995,000.

As mentioned on page 36, our CSR efforts received a boost in 2009 with the launch of a formal DUBAL CSR Policy and Strategy. We also launched the DUBAL CSR Club in 2009, which enhances DUBAL's CSR by facilitating employee engagement in community development initiatives — thereby encouraging the culture of volunteerism that is nurtured by ENGAGE Dubai. As members of the club, our employees can express their individual support for the community, thereby helping to uplift society, while simultaneously endorsing the image and positioning of our company and brand. During

the year, our employees engaged with diverse organizations and their beneficiaries, notably Dubai Autism Center, Al Mamzar Geriatric Center; Al Noor Training Centre for Children with Special Needs, Dubai Center for Special Needs, and Dubai Charity Center. Through the DUBAL Ladies' Club, employees were also able to support the Dubai Shoe Box Appeal (which distributes everyday items to labourers during Ramadhan) and Breast Cancer Month.

Employees are also encouraged to support community projects, whether individually or in groups, outside of the DUBAL CSR Club's scope. Our community work is complemented by DUBAL's corporate sponsorship of sporting, trade and other events.

Community and social projects

In the course of 2008 and 2009, DUBAL was involved in several CSR initiatives through contributions of time, financial support and/or individual effort. Our philanthropy during the period included the following, among many others:

- Sponsorship of the annual Al Noor Training Centre for Children with Special Needs Charity Gala, where the funds raised go towards specialist equipment requirements.
- Facilitating fund-raising for victims of floods in Orissa, India (2008) and the Philippines (2009) by our employees, through our payroll system.
- Ad hoc donations to primary and high schools as part of fund-raising efforts or sponsorship of awards for academic achievements.
- Sponsorship of the annual Rashid Summer Camp, attended by young UAE National boys.
- Sponsorship of the 2009 UAE Mass Wedding for people with special needs.



- Sponsorship of selected Emirates Environment Group (EEG) activities.

As in previous years, we continued to invest financial resources in school and university students during 2008 and 2009, with the aim of supporting the efforts of the Ministry of Education (MOE) to educate the nation. Our main activities in this area included:

- DUBAL Educational Award, a competition-based initiative hosted in conjunction with the MOE in which students attending plant tours at DUBAL during the 2007/2008 academic year were encouraged to express the experience either in writing or through visual art in the hope of winning cash prizes.
- DUBAL Clubs of Excellence, launched in conjunction with the MOE as a pilot project for the 2009/2010 academic year, which

### Case study:

#### Clean up the World

In 2009, DUBAL took part in the “Clean up the World Campaign”, organized by Dubai Municipality and held each year for the past 16 years with the purpose of spreading awareness on environmental issues and contributing towards a cleaner and healthier environment.

Our team of dedicated volunteers spent considerable time and energy in collecting waste and recycling materials from residential communities and cleaning public beaches. The concept was also brought closer to home by conducting a clean-up campaign that targeted three specific areas of our Jebel Ali site.

involves establishing individual clubs (of the same name) at secondary schools in Dubai. These clubs aim to create awareness among school students on specific themes that project DUBAL's objectives, such as environmental protection; and enter their efforts in an annual competition for which cash prizes are at stake.

The 2009/2010 academic year also witnessed the pilot phase of DUBAL's Ta'awon Programme, which provides support for students enrolled in engineering colleges with respect to their graduation projects. Students are given valuable industrial exposure by tackling real issues, while DUBAL benefits from accessing the intellectual capacity and creativity of our country's talented young engineers.

Our Summer Programme, Work Placement Programme and Pre-employment Courses also provide valuable support to education in the UAE. We also continued to provide in-kind assistance to schools, training centres and universities through our employees delivering guest lectures and/or addressing seminars on issues related to engineering and business management throughout 2008 and 2009. In addition, DUBAL sponsored the 2008 UAE IT Challenge, an annual project that encourages students to develop their skills in technology and IT.

Reflecting our commitment to protecting the environment, DUBAL is an active member of EEG. Our employees are encouraged to attend the EEG's free monthly community lectures and participate in the annual EEG Can Collection Campaign (see case study on page 47). We also support other environment-related initiatives, such as the annual Clean up the World Campaign, hosted by the city of Dubai (see case study alongside); and in 2009 participated for the first time in the

international Earth Hour campaign. To limit DUBAL's carbon footprint, a number of internal environmental programmes were held to educate our workforce and enhance their understanding of key environmental issues.

#### Sponsorships

Over and above direct and indirect contributions to the economy, DUBAL also supports the Dubai government by engaging in corporate sponsorship of world-class sporting events that showcase Dubai's tourism and business infrastructure to international audiences. In 2008 and 2009, these once again included:

- Dubai Desert Classic Golf Tournament;
- Dubai Ladies' Masters Golf Tournament;
- Dubai International Horse Racing Carnival;
- Dubai International Arabian Horse Championship; and
- UAE National Jet Ski Racing Series

Details of our involvement in these events are provided in the DUBAL Corporate Review 2008/2009. Wherever possible, we leverage our involvement in these events to engage with our customers, supplier, employees and other stakeholders — especially the community.

We also sponsor regional award programmes that recognise and reward innovation; and participate in career exhibitions that maintain awareness of our company as an employer of choice in the region, with the aim of increasing the proportional Emirati representation within our workforce.

#### Services to Dubai

At DUBAL's inception in 1979, our corporate slogan was “Metal for the World, Water for Dubai”. This reflected the innovative decision to

include a Desalination Plant within our smelter complex, whereby the heat generated hot combustion gases from the gas turbines in our Power Plant are used to produce steam, which in turn provides the energy to produce sweet water (potable and distilled) via thermal desalination of seawater.

The slogan also reflected our commitment to provide Dubai with potable water on a not-for-profit basis — thereby helping to fulfil the water demands of the city. This extends to providing water free-of-charge as required by the emergency and fire services in and around the Jebel Ali area. More recently, we established a dedicated water filling station on our site to facilitate the supply of seawater to the Dubai Aquarium, the world's largest indoor aquarium located at Dubai Mall.

The DMC, which is open seven days a week, provides free medical coverage to our employees and their families and responds to emergencies as necessary (see page 45). The facility also caters for employees of other companies operating in the Jebel Ali area with regard to occupational health; and supports Dubai's emergency services by also responding to incidents in close proximity to our site. Likewise, our fire-service team has participated in various events in Dubai to promote fire safety and responds to incidents along Sheikh Zayed Road in the vicinity of our site.

Also in support of Dubai, we run one or more blood donation campaigns on-site every year in partnership with the Dubai Blood Bank. In both 2008 and 2009, we received an overwhelming response from our employees.



# Key indicators

	Unit	2004	2005	2006	2007	2008	2009
<b>Final product</b>							
Metal sold	tonne	727,152	851,806.00	906,547	911,554	924,308	1,001,257
Gross metal cast	tonne			851,718	943,997	947,507	1,009,773
External water sales (BL & UBL)	MI	8,818	29,355	38,126	29,289	27,640	20,476
<b>Metal markets</b>							
<b>Distribution of markets</b>							
Asia	%	51	51	43	36	37	42
Europe	%	20	20	28	30	26	16
North America	%	7	7	9	18	9	5
Middle East and North Africa (MENA)	%	22	22	20	16	28	37
<b>Profit</b>							
Compound annual revenue growth rate (1995 to 2009)	%						10.3
Compound annual profit growth rate (1995 to 2009)	%						3.3
<b>Expenditure distribution</b>							
UAE (other than Dubai)	million AED				111.11	96.49	105.94
Dubai	million AED				1,901.54	2,224.81	1,891.71
GCC	million AED				79.43	191.56	193.14
Middle East	million AED				33.76	41.06	175.2
Total purchase from local suppliers	million AED				2,125.84	2,533.92	2,208.31
<b>Land use</b>							
Total area disturbed	hectare	480	480	480	480	480	495
<b>Raw materials</b>							
Alumina	tonne	1,385,471	1,413,662	1,548,347	1,670,891	1,773,797	1,690,753
Petroleum coke	tonne	235,895	280,055	287,543	309,759	284,570	285,291
Pitch	tonne	71,025	56,773	58,492	85,747	63,213	53,186
Alumina trifluoride	tonne	9,872	8,841	13,363	15,006	13,275	9,849
Purchased anodes	tonne	-	-	38,063	39,671	128,290	47,117
Natural gas	GJ	109,798,247	106,443,033	101,839,260	119,429,147	128,072,884	147,741,615
Distillate	GJ	41,687	6,275,564	23,011,113	18,087,358	762,193	173,330

Data in 2007 Sustainability Report amended

	Unit	2004	2005	2006	2007	2008	2009
<b>Energy consumption</b>							
External purchased electricity	MWh	161.19	147.36	129.43	135.74	143.62	154.60
Average electrical load	MW	0.13	8.74	29.30	20.32	0.855	0.188
Natural gas	GJ	15.08	15.47	15.82	16.87	17.69	15.25
Distillate	GJ	1.67	1.51	1.33	1.26	1.71	1.16
Anode consumption	GJ	178.1	173.1	175.9	174.2	163.9	171.2
Packing coke and volatiles (Baking Kilns)	GJ	681,034	722,545	786,592	889,548	891,721.608	955,403.93
<b>Water consumption</b>							
Unblended water (excluding Desalination)	m <sup>3</sup> /tonne Al	238,979	36,025,583	131,456,651	103,596,644	4,107,419	665,941
Desalination consumption (sea water)	1,000,000 m <sup>3</sup>	196	239	294	248	290	234
Discharge to the sea	1,000,000 m <sup>3</sup>				965,685	1,186,109,110	1,030,487,710
<b>Emissions</b>							
<b>Greenhouse gas emissions</b>							
Electricity generation	t CO <sub>2eq</sub>	5,468,703	5,700,880	6,654,568	7,249,816	7,088,929	7,574,926
Anode consumption	t CO <sub>2eq</sub>	1,048,792	1,112,719	1,227,084	1,361,008	1,383,908	1,488,632
Perfluorocarbons	t CO <sub>2eq</sub>	177,069	252,891	243,844	213,492	339,415	290,845
Others	t CO <sub>2eq</sub>	231,552	245,665	251,709	275,760	308,010	263,343
Total	t CO <sub>2eq</sub>	6,926,116	7,312,155	8,377,205	9,100,076	9,120,262	9,617,746
<b>Other gaseous emissions</b>							
Oxides of sulphur	tonne	11,578	12,139	14,709	14,678	15,581	16,679
Oxides of nitrogen	tonne	14,322	14,444	21,655	16,866	12,210	12,230
Fluoride	tonne	484	470	519	552	531	561
<b>Waste</b>							
<b>Solid waste to landfill</b>							
Spent pot lining (SPL)	kg/tonne Al	11.37	18.72	6.01	6.34	16.19	19.86
Other hazardous (excluding SPL)	kg/tonne Al	5.95	4.01	4.26	7.39	3.77	3.58
General waste	kg/tonne Al	22.40	21.40	20.10	19.50	19.54	18.68
Total solid waste to landfill	kg/tonne Al	39.72	44.13	30.37	33.23	39.50	42.12

	Unit	2004	2005	2006	2007	2008	2009
Hazardous liquid waste	tonne	1,559	1,698	1,205	1,153	1,181	1,438
Non hazardous	tonne	11,276	10,348	10,349	12,300	13,017	13,412
Total waste generated (excluding anodes recycled)	tonne	12,875	12,090	11,584	13,486	14,237	14,892
Total waste disposed	tonne	26,920	31,922	23,890	2,478	35,315	40,239
Water recycled from sewage	%	96.7	97.6	97.5	92.0	89.7	88.6
Recycled water from sewage	MI	425	414	467	537	419	301
<b>Human capital</b>							
HSE expenditure	million AED				262.59	324.98	326.98
<b>Community investment (Note 1)</b>							
Education & training	million AED			600	1,790	1,894	612
Environment	million AED			25	60	560	65
Charity	million AED			135	340	868	155
Sport	million AED			2,000	2,450	3,363	2,487
General	million AED			40	160	270	724
Total investment (Note 1)	million AED			2,800	4,800	6,955	4,043
<b>Employment</b>							
Total number of full-time employees		3,023	3,182	3,569	3,747	4,261	3,933
Total number of expats employed		2,382	2,474	2,768	2,904	3,386	3,103
Total number of nationals employed		641	708	801	843	875	830
Total number of women employed		120	147	175	208	211	224
Employee retention rate		10.0	8.8	7.3	6.9	7.2	9.4
<b>Training</b>							
Training cost	million AED	4.41	7.85	10.43	11.93	15.16	8.85
Training days/employee		2.76	4.17	3.96	2.92	5.80	5.00
<b>Health</b>							
Cases of heat stress		19	16	12	23	19	17
Heat stress lost working days		7	7	0	0	0	0
Cases of heat rash		141	77	76	31	10	8

Note 1: Excludes Dubai Desert Classic and Dubai International Horse Racing Carnival.

	Unit	2004	2005	2006	2007	2008	2009
Heat rash lost working days		111	13	5	0	0	0
<b>Safety</b>							
Lost time incidents (LTIs)		16	9	12	2	3	3
LTIs lost working days		360	641	473	64	121	55
Number of fatalities		0	0	0	2	0	0
LTIFR	*	2.31	1.21	1.44	0.23	0.33	0.31
TRIFR	*	13.07	10.15	11.65	6.30	5.65	4.27
<b>Power plant key indicators (Note 2)</b>							
MWh generated	MWh	10,989,021	11,777,017	12,647,071	14,365,053	14,543,785	15,511,584
Efficiency (Note 2)	%	40.9	42.8	41.4	42.3	43.3	43.0
Total fuel energy (Gsa & Dist.)	GJ/MWh	10.00	9.57	9.87	9.57	8.99	9.53
Compressed air	Nm <sup>3</sup>	506,735,712	572,656,896	621,703,488	630,967,296	670,701,481	715,294,750
<b>Desalination plant key indicators</b>							
Water production (actual)	MI	13,372	33,130	42,070	34,657	31,379	24,481
Seawater consumption for desalination	MI	195,818	239,295	293,835	248,033	289,613	233,888
Steam	tonne/MW	10.1	11.2	10.7	10.4	14.5	11.1
<b>Smelter key indicators</b>							
Production by potlines	tonne	671,915	724,565	789,341	889,548	891,723	955,404
Final product (including alloys)	tonne	749,298	859,376	925,100	936,241	947,507	1,002,575
Electrolysis energy	DC MWh/t Al	14.3	14.5	14.4	14.3	14.6	14.7
Current efficiency	%	95.1	95.1	95.2	95.0	94.4	93.8

Note 2: Efficiency is at a reference temperature of 38°C.

\* Per million man-hours

## GRI index

F: Fully reported P: Partially reported N: Not reported NA: Not applicable to DUBAL

Indicators	Page	Extent of Reporting
<b>Strategy &amp; Analysis</b>		
1.1 CEO's Statement	1 & 2	F
1.2 Key Impacts, Risks and Opportunities	7 & 8	F
<b>Organizational Profile</b>		
2.1 Name of the Organization	5	F
2.2 Primary Brands, Products and / or Services	-	NA
2.3 Operational structure of the organization, including main divisions, operating companies, subsidiaries, and joint ventures.	5 & 18	F
2.4 Location of Organization's Headquarters	5	F
2.5 Number of countries where the organization operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report.	4 & 5	F
2.6 Nature of Ownership and Legal Form	36	F
2.7 Markets served (including geographic breakdown, sectors served, and types of customers/beneficiaries).	5, 16 & 17	F
2.8 Scale of the Reporting Organization	5	F
2.9 Significant changes during the reporting period regarding size, structure, or ownership	18	F
2.10 Awards received during the reporting period	6	F
<b>Report Parameters</b>		
3.1 Reporting Period	4	F
3.2 Date of most recent previous report	4	F
3.3 Reporting Cycle	2	F
3.4 Contact point for questions regarding the report and its content	4	F
3.5 Process for defining report content	4	F
3.6 Boundary of the report (e.g., countries, divisions, subsidiaries, leased facilities, joint ventures, suppliers).	4	F
3.7 Limitations on the scope or boundary of the report.	4	F
3.8 Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability from period to period and/or between organizations.	4	F

Indicators	Page	Extent of Reporting
3.9 Data measurement techniques and the bases of calculations, including assumptions and techniques underlying estimations applied to the compilation of the Indicators and other information in the report.	-	N
3.10 Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement (e.g. mergers/ acquisitions, change of base years/periods, nature of business, measurement methods).	4	P
3.11 Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report.	4	F
3.12 Table identifying the location of the Standard Disclosures in the report.	58 to 64	F
3.13 Policy and current practice with regard to seeking external assurance for the report. If not included in the assurance report accompanying the Sustainability Report, explain the scope and basis of any external assurance provided. Also explain the relationship between the reporting organization and the assurance provider(s).	4	F
<b>Governance, Commitments and Engagement</b>		
4.1 Governance structure of the organization, including committees under the highest governance body responsible for specific tasks, such as setting strategy or organizational oversight.	12 to 14	F
4.2 Indicate whether the Chair of the highest governance body is also an executive officer.	12	F
4.3 For organizations that have a unitary board structure, state the number of members of the highest governance body that are independent and/or non-executive members.	12	F
4.4 Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body.	12 & 13	F
4.5 Linkage between compensation for members of the highest governance body, senior managers, and executives (including departure arrangements), and the organization's performance (including social and environmental performance).	12	F
4.6 Processes in place for the highest governance body to ensure conflicts of interest are avoided.	13	F
4.7 Process for determining the qualifications and expertise of the members of the highest governance body for guiding the organization's strategy on economic, environmental, and social topics.	-	N
4.8 Internally developed statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance and the status of their implementation.	5	F
4.9 Procedures of the highest governance body for overseeing the organization's identification and management of economic, environmental, and social performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles.internationally agreed standards, codes of conduct, and principles.	12 to 14	F
4.10 Processes for evaluating the highest governance body's own performance, particularly with respect to economic, environmental, and social performance.	12	P
4.11 Explanation of whether and how the precautionary approach or principle is addressed by the organization.	12	P
4.12 Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses.	14	P
4.13 Memberships in associations (such as industry associations) and/or national/international advocacy organizations.	14	F

Indicators	Page	Extent of Reporting
4.14 List of stakeholder groups engaged by the organization.	36	F
4.15 Basis for identification and selection of stakeholders with whom to engage.	36	F
4.16 Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group.	36 to 38	F
4.17 Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting	36 to 38	F
<b>Economic</b>		
EC1 Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.	16	F
EC2 Financial implications and other risks and opportunities for the organization's activities due to climate change.	-	N
EC3 Coverage of the organization's defined benefit plan obligations.	40	F
EC4 Significant financial assistance received from government.	36	F
EC5 Range of ratios of standard entry level wage compared to local minimum wage at significant locations of operation.	40	F
EC6 Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation.	46	P
EC7 Procedures for local hiring and proportion of senior management hired from the local community at locations of significant operation.	38	F
EC8 Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement.	49 & 50	F
EC9 Understanding and describing significant indirect economic impacts, including the extent of impacts.	47 & 50	F
<b>Environmental</b>		
EN1 Materials used by weight or volume.	31 & 32	F
EN2 Percentage of materials used that are recycled input materials.	31	P
EN3 Direct energy consumption by primary energy source.	25 to 27	F
EN4 Indirect energy consumption by primary source.	25 to 27	F
EN5 Energy saved due to conservation and efficiency improvements.	27 to 28	F
EN6 Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives.	27 to 28	F
EN7 Initiatives to reduce indirect energy consumption and reductions achieved.	28	F
EN8 Total water withdrawal by source.	28	F
EN9 Water sources significantly affected by withdrawal of water.	28 & 29	F

Indicators	Page	Extent of Reporting
EN10 Percentage and total volume of water recycled and reused.	29	F
EN11 Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.	32	F
EN12 Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.	32	F
EN13 Habitats protected or restored.	32 & 33	F
EN14 Strategies, current actions, and future plans for managing impacts on biodiversity.	32 & 33	F
EN15 Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.	-	N
MM1 Amount of land (owned or leased, and managed for production activities or extractive use) disturbed or rehabilitated.	-	N
MM2 The number and percentage of total sites identified as requiring biodiversity management plans according to stated criteria, and the number (percentage) of those sites with plans in place.	-	N
EN16 Total direct and indirect greenhouse gas emissions by weight.	24	F
EN17 Other relevant indirect greenhouse gas emissions by weight.	24	F
EN18 Initiatives to reduce greenhouse gas emissions and reductions achieved.	24	F
EN19 Emissions of ozone-depleting substances by weight.	-	N
EN20 NO, SO, and other significant air emissions by type and weight.	22	F
EN21 Total water discharge by quality and destination.	28	F
EN22 Total weight of waste by type and disposal method.	31	F
EN23 Total number and volume of significant spills.	30	F
EN24 Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.	-	N
EN25 Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.	32 & 33	F
MM3 Total amounts of overburden, rock, tailings, and sludges presenting potential hazards.	-	NA
EN26 Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.	-	N
EN27 Percentage of products sold and their packaging materials that are reclaimed by category.	-	NA
EN28 Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.	-	N
EN29 Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.	-	N

Indicators	Page	Extent of Reporting
EN30 Total environmental protection expenditures and investments by type.	22 to 33	p
<b>Labour Practices and Decent Work</b>		
LA1 Total workforce by employment type, employment contract, and region.	38	F
LA2 Total number and rate of employee turnover by age group, gender, and region.	39	F
LA3 Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations.	39 & 40	F
LA4 Percentage of employees covered by collective bargaining agreements.	40	F
LA5 Minimum notice period(s) regarding operational changes, including whether it is specified in collective agreements.	42	P
MM4 Number of strikes and lockouts exceeding one week's duration, by country.	-	NA
FPSS7 Number of strikes and lock-outs exceeding one week's duration, by country	-	NA
LA6 Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advice on occupational health and safety programs.	43	F
LA7 Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region.	44	F
LA8 Education, training, counselling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases.	44 & 45	F
LA9 Health and safety topics covered in formal agreements with trade unions.	-	NA
LA10 Average hours of training per year per employee by employee category.	41 to 43	F
LA11 Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.	42	F
LA12 Percentage of employees receiving regular performance and career development reviews.	41	F
LA13 Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership, and other indicators of diversity.	38 & 39	F
LA14 Ratio of basic salary of men to women by employee category.	40	F
<b>Human Rights</b>		
HR1 Percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights screening.	-	N
HR2 Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken.	46	F
HR3 Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.	43	P
HR4 Total number of incidents of discrimination and actions taken.	43	F
HR5 Operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk, and actions taken to support these rights.	-	NA

Indicators	Page	Extent of Reporting
<b>HR6</b> Operations identified as having significant risk for incidents of child labour, and measures taken to contribute to the elimination of child labour.	-	N
<b>HR7</b> Operations identified as having significant risk for incidents of forced or compulsory labour, and measures to contribute to the elimination of forced or compulsory labour.	-	N
<b>HR8</b> Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations.	42 & 43	P
<b>HR9</b> Total number of incidents of violations involving rights of indigenous people and actions taken.	-	N
<b>MM5</b> Total number of operations taking place in or adjacent to Indigenous Peoples' territories, and number and percentage of operations or sites where there are formal agreements with Indigenous Peoples' communities.	-	N
<b>Society</b>		
<b>S01</b> Nature, scope, and effectiveness of any programs and practices that assess and manage the impacts of operations on communities, including entering, operating, and exiting.	-	N
<b>MM6A</b> Number and description of significant disputes relating to land use, customary rights of local communities and indigenous peoples.	-	N
<b>MM6B</b> The extent to which grievance mechanisms were used to resolve disputes relating to land use, customary rights of local communities and indigenous peoples, and their outcomes.	-	N
<b>S02</b> Percentage and total number of business units analyzed for risks related to corruption.	-	N
<b>S03</b> Percentage of employees trained in organization's anti-corruption policies and procedures.	-	N
<b>S04</b> Actions taken in response to incidents of corruption.	-	N
<b>S05</b> Public policy positions and participation in public policy development and lobbying.	14	P
<b>S06</b> Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country.	-	NA
<b>S07</b> Total number of legal actions for anticompetitive behaviour, anti-trust, and monopoly practices and their outcomes.	-	N
<b>S08</b> Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations.	-	N
<b>MM7</b> Number (and percentage) of company operating sites where artisanal and small-scale mining (ASM) takes place on, or adjacent to, the site; describe the associated risks and the actions taken to manage and mitigate these risks.	-	NA
<b>MM8</b> List sites where resettlements took place, the number of households resettled in each, and how their livelihoods were affected in the process.	-	NA
<b>MM9</b> Number and percentage of operations with closure plans.	-	N
<b>MM10</b> Significant incidents involving communities in which grievance mechanisms have been invoked to address them together with their outcomes.	-	N
<b>MM11</b> Number and description of incidents affecting employees, communities, or the environment in which emergency preparedness procedures were activated.	1	p

Indicators	Page	Extent of Reporting
<b>Product Responsibility</b>		
<b>FPSS8</b> Nature, scope and effectiveness of any programs and practices (financial grants, in-kind contributions, volunteer initiatives, knowledge transfer, partnerships and product development etc) that promote access to healthy and affordable food and improved welfare for communities in need.	47 to 50	F
<b>PR1</b> Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures.	-	N
<b>PR2</b> Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services during their life cycle, by type of outcomes.	-	N
<b>FPSS3</b> Percentage of production volume manufactured in sites certified by an independent third party according to internationally recognised food safety management system standards.	30	F
<b>FPSS4</b> Percentage of consumer products sold that is lowered in saturated fat, trans/hydrogenated fats, sodium and added sugars.	-	NA
<b>FPSS5</b> Percentage of consumer products sold that have preserved or increased fiber, vitamins, minerals and phytochemicals.	-	NA
<b>PR3</b> Type of product and service information required by procedures and percentage of significant products and services subject to such information requirements.	-	NA
<b>PR4</b> Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labelling, by type of outcomes.	-	NA
<b>PR5</b> Practices related to customer satisfaction, including results of surveys measuring customer satisfaction.	36 & 37	F
<b>FPSS6</b> Policy and practices and to communicate ingredients, nutritional information and additives and their functions.	-	NA
<b>PR6</b> Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship.	37	F
<b>PR7</b> Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship by type of outcomes.	37	F
<b>PR8</b> Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.	37	F
<b>PR9</b> Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services.	37	F
<b>MM12</b> Programmes and progress relating to materials stewardship.	32	F
<b>FPSS1</b> Percentage of purchased volume from suppliers compliant with company's sourcing policy where material.	45 to 47	F
<b>FPSS2</b> Percentage of purchased volume which is verified as being in accordance with internationally recognised responsible production standards and other relevant standards, broken down by standard, where material.	45 to 47	F

# Glossary

Term	Definition
<b>Carbon Footprint</b>	The total set of carbon dioxide and emissions of other gasses created through the activities of a person, company or other entity.
<b>Clean Development Mechanism (CDM)</b>	The Clean Development Mechanism (CDM) is an arrangement under the Kyoto Protocol allowing industrialised countries with a greenhouse gas reduction commitment to invest in ventures that reduce emissions in developing countries as an alternative to more expensive emission reductions in their own countries.
<b>Combined Cycle Power Plant</b>	Combined Cycle Power Plants are those which have both gas and steam turbines supplying power to the network.
<b>Customer Service Centres</b>	The Customer Service Centre serves as DUBAL's communication link outside of the UAE to provide timely and consistent handling of customer needs.
<b>Defined Benefit Plans</b>	A type of pension plan in which an employer promises a specified monthly benefit on retirement that is predetermined by a formula based on the employee's earnings history, tenure of service and age, rather than depending on investment returns. This is a secured deposit savings plan for DUBAL employees.
<b>Desalination</b>	A process that removes excess salt and other minerals from seawater to make it potable.
<b>Direct Emissions</b>	Emissions from sources generally within the boundary of an organization.
<b>Earth Hour</b>	Earth Hour is a global event organised by the World Wide Fund for Nature (WWF) asking households and businesses to turn off their non-essential lights and other electrical appliances for one hour to raise awareness towards the need to take action on climate change.
<b>Electrolysis</b>	A method of separating chemically bonded elements and compounds by passing an electric current through them.
<b>Energy Efficiency</b>	Using measures to provide/consume less energy at the same level of energy service and performance.
<b>Environmental Expenditure</b>	Investments and expenditure allocated by DUBAL for environmental projects, technology and community programmes.
<b>Environmental Management System</b>	A system designed for the management of an organization's environmental programmes in a comprehensive, systematic, planned and documented manner. It includes the organizational structure, planning and resources for developing, implementing and maintaining policy for environmental protection.
<b>Executive Management</b>	Employees who belong to grade 19 or above. They are responsible for providing DUBAL with strategic direction.
<b>Green Belt</b>	A green belt is a policy and land use designation used in land use planning to retain areas of largely undeveloped, wild, or agricultural land surrounding or neighbouring urban areas. DUBAL's green belt lies between the smelters and the Residential Area providing employees and residents with visual amenity and environmental protection.
<b>Greenhouse Gas Emissions</b>	Gases that trap heat in the atmosphere and are a major contributor to global warming.
<b>Health Surveillance Programmes</b>	Health and safety programmes designed to prevent illness. DUBAL's programme is used to monitor employee health and educate them about health risks.

Term	Definition
<b>Indirect Emissions</b>	Emissions from sources generally outside the boundary of an organization. These emissions are mainly associated with waste disposed off-site, as well as the generation of imported electricity (not generated on site), heat, steam, gas and the production and distribution of petroleum products.
<b>International Aluminium Institute (IAI)</b>	A global forum of the world's aluminium producers. The Institute has 27 member companies and they are represented on the IAI Board of Directors by their CEOs. Together, the IAI Member Companies represent more than 80 per cent of the world's primary aluminium production.
<b>National Emiratization Policy</b>	A UAE Government policy aimed towards increasing the number of UAE National employees in the private sector.
<b>Non-Governmental Organizations</b>	A legally constituted entity created by natural or legal persons with no participation or representation of any government.
<b>Non-Indigenous Organism</b>	A species living outside its native distributional range, which has arrived there due to human activity, either deliberate or accidental. Such organisms can be damaging to the ecosystem they are introduced into, others negatively affect agriculture or impact on the health of animals and humans.
<b>Non-strategic Suppliers</b>	Suppliers that provide DUBAL with everything other than raw materials.
<b>Non-Supervisory Staff</b>	Employees who belong in grades 5 to 9 and are mainly involved in the production process at DUBAL.
<b>Particulate Matter</b>	Tiny subdivisions of solid or liquid matter suspended in a gas or liquid. Sources of particulate matter can be man-made or natural.
<b>Persistent Organic Pollutants</b>	Organic compounds which are resistant to environmental degradation through chemical, biological, and photolytic processes. Because of this, they have been observed to persist in the environment, and can have potentially significant impacts on human health and the environment.
<b>Policy Rate</b>	The basic salary rate defined for each staff grade level.
<b>Radioactive materials</b>	Material that contains unstable atoms which give off radiation as they decay.
<b>Specific Energy</b>	Power consumed to produce one kilogram of hot metal.
<b>State-Owned Enterprise</b>	An enterprise wholly owned by the government of Dubai.
<b>Strategic Suppliers</b>	Suppliers that provide DUBAL with key raw materials used in the production of aluminium.
<b>Supervisory Staff</b>	Employees in grades 11 to 17 who are mainly hold supervisory roles.
<b>Thermal Efficiency</b>	The measure of the efficiency and completeness of combustion of the fuel, or the percentage of heat energy that is transformed into work.
<b>Triple C Campaign</b>	The set of measures taken by DUBAL during the economic downturn to improve on cash generation, cash conservation and cost reduction.
<b>Upstream Investments</b>	Strategic investments made to ensure the secure supply of raw materials.

# Acronyms & abbreviations

AC	Alternating Current
ACN	Arabian Computer News
AE	Anode Effect
AED	Arab Emirates Dirhams
AFR	Alternative Fuel and Raw Material
Al	Aluminium
AlF <sub>3</sub>	Alumina trifluoride
Al <sub>2</sub> O <sub>3</sub>	Alumina
ASEAN	Association of South East Asian Nations
ATM	Automated Teller Machine
BE	Business Excellence
BSC	Balanced Scorecard
C	Carbon
°C	Degree Celsius
CAL	Cameroon Alumina Limited
CAP	Companhia de Alumina do Pará
CDM	Clean Development Mechanism
CEMS	Continuous Emissions Monitoring System
CEO	Chief Executive Officer
CF <sub>4</sub>	Tetrafluoromethane
C <sub>2</sub> F <sub>6</sub>	Hexafluoroethane
CFC	Chlorofluorocarbon
CIO	Chief Information Officer
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2eq</sub>	Carbon Dioxide equivalent
CSR	Corporate Social Responsibility
DAC	Dubai Autism Center
DBP	Disinfection By-Products
DC	Direct Current
DEWA	Dubai Electricity and Water Authority
DMC	DUBAL Medical Centre
DQG	Dubai Quality Group
DTC	DUBAL Training Centre
DUBAL	Dubai Aluminium Company Limited
DUSUP	Dubai Supply Authority
EC	Evaporative Cooling
EEG	Emirates Environment Group
EHS	Environment, Health & Safety
EIA	Environmental Impact Assessment
EMAL	Emirates Aluminium
EMS	Environmental Management System
FIFR	Fatal Injury Frequency Rate (per million man-hours)
FTP	Fume Treatment Plant
GAC	Guinea Alumina Corporation
GJ	Gigajoule
GHG	Greenhouse Gas
GOR	Gained Output Ratio
GRI	Global Reporting Initiative
HF	Hydrogen Fluoride
HH	His Highness
HR	Human Resources

HRSO	Heat Recovery Steam Generator
HV	High Voltage
IAI	International Aluminium Institute
ILM	Institute of Leadership and Management
ISO	International Organization for Standardisation
IT	Information Technology
ITGAF	IT Governance Assurance Forum
ITSM	Information Technology Service Management
JUSE	Union of Japanese Scientists and Engineers
kA	Kilo-Amperes
kg	Kilogram
kg/mt	Kilograms per metric tonne
km	Kilometre
kWh/kg	Kilowatt hours per kilogram
LME	London Metal Exchange
LOA	Levels of Authority
LSS	Lean Six Sigma
LTI	Lost Time Injury
LTIFR	Lost Time Injury Frequency Rate (per million man-hours)
m <sup>3</sup>	Metres cubed
m <sup>3</sup> /mt	Metres cubed/metric tonne
MEBA	Middle East Business Award
MENA	Middle East North Africa
MIG/day	Million Imperial Gallons per day (also given as MIGD)
MOE	Ministry of Education
MRM	Mohammed Bin Rashid Al Maktoum Awards
MSF	Multi-stage Flash
mt	Metric tonne
MW	Megawatt
MWh/mt	Megawatt hours per metric tonne
Na <sub>3</sub> AlF <sub>6</sub>	Cryolite
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Oxides of Nitrogen
OHH	Occupational Health and Hygiene
OSHAS	Occupational Safety and Health Administration System
PEC	Pre-employment Course
PFC	Perfluorocarbon
PM	Particulate Matter
SAP	Systems Applications and Products in Data Processing
SDI	Sustainable Development Initiative
SPL	Spent Pot Lining
SO <sub>2</sub>	Sulphur Dioxide
TQM	Total Quality Management
TRI	Total Recordable Injury
TRIFR	Total Recordable Injury Frequency Rate
UAE	United Arab Emirates
UK	United Kingdom
UNESCO	United Nations for Environmental, Scientific and Cultural Organization
US\$	United States Dollar
USA	United States of America
WHO	World Health Organization
WWF	World Wildlife Fund

**For additional information, contact:**

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