

# Growing stronger together

Corporate review 2008/2009

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**dubal**  
Dubai Aluminium

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## Scope of this review

This corporate review details DUBAL's activities in 2008 and 2009. It follows the prior biennial corporate review for the years 2006 and 2007, published in May 2008. The content complements the second DUBAL Sustainability Report for 2008/2009, compiled in accordance with the Global Reporting Initiative (GRI) and published in the fourth quarter of 2010.

The two-year period under review has seen remarkable growth at DUBAL, despite the global economic recession that began in 2008; further development of our upstream interests; and continued efforts to improve productivity, operating efficiency and profitability. These developments are elaborated on elsewhere in this publication.

## Corporate profile

Dubai Aluminium Company Limited (DUBAL) owns and operates one of the world's largest aluminium smelters with a captive power station. Built on a 480-hectare site in Jebel Ali, Dubai, the major facilities within this complex comprise a 990,000 metric tonne per annum primary aluminium smelter, a 2,335 megawatt power station (at 35°C), a large carbon plant, casting operations with a capability of more than 1,270,000 metric tonnes per annum, a 30 million imperial gallon per day water desalination plant, laboratories, port and storage facilities.

Our Jebel Ali plant produces high quality finished aluminum products a year, in three main forms: foundry alloy for automotive applications; extrusion billet for construction, industrial and transportation purposes; billets for forging purposes in automotive industries; and high purity aluminium for the electronics and aerospace industries. Our full production capacity is made to order and shipped to more than 250 valued customers in about 45 countries worldwide, predominantly in the Far East, Europe, the ASEAN region, the MENA region, and North America.

DUBAL, as an industrial enterprise, holds ISO 9001, ISO/TS 16949, ISO/IEC 27001, ISO/IEC 20000, ISO 14001 and OSHAS 18001 certification; and has twice won the Dubai Quality Award in the Production and Manufacturing sector (1996 and 2000). Approximately 4,000 skilled operators, tradesmen, administrative staff, technicians, professionals and managers are employed at our Jebel Ali site. At the end of 2009, some 22 per cent of the total workforce was drawn from the local population, with UAE Nationals

holding over 70 per cent of senior management positions. Emphasis is placed on life-long learning, with regular skills development and training interventions facilitating continued personal and corporate growth.

In addition to direct employment, DUBAL generates thousands of indirect jobs in the local economy through outsourcing as well as local purchases of goods and services. Ongoing investments in community initiatives and corporate sponsorships contribute meaningfully to the socio-economic development of the city and Emirate of Dubai.

DUBAL also holds a 50 per cent share in Emirates Aluminium Company Limited (EMAL), a greenfield smelter development at Al Taweelah, Abu Dhabi. Commissioning of EMAL Phase I (comprising a 756-cell smelter plus associated power generation, reduction material and casting infrastructure) began in December 2009. Investments are also being made to secure a portion of DUBAL's alumina requirements.

Driven by a quest for continuous improvement and ongoing innovation, our company has invested substantial resources over the past 25 years in developing advanced reduction cell technologies that not only improve productivity but also reduce our operations' impact on the environment through improved energy efficiency and minimized emission levels. This has culminated most recently in our proprietary DUBAL DX Reduction Technology — a UAE flagship technology that operates at 370 kilo-Amperes (kA) and performs among the best reduction technologies available. Developed in 2006, DX Reduction Technology has been implemented

in a dedicated 40-cell potline at our Jebel Ali smelter complex; and has been licensed to EMAL Phase I.

Entirely state-owned, DUBAL is one of the largest non-oil contributors to the economy of Dubai and is widely regarded as the industrial flagship of Dubai and the UAE. Having begun to tap metal at the Jebel Ali site in November 1979, our company celebrated its 30th anniversary in 2009.



## Chairman's message

# Triumphant, despite the challenges

Our vision for DUBAL, formulated in 2005, is to become one of the world's top five aluminium producers by 2015. Today, with a capacity of almost one million metric tonnes per year, DUBAL is the largest primary aluminium producer in the Middle East. Our share of the world aluminium market, by production capacity, is 2.6 per cent.

The two years covered by this corporate review ranked among the most challenging for businesses worldwide, having borne witness to the onset mid-2008 of the deepest global economic recession in recent history. As a global player, DUBAL was not immune to these dynamics. However, as one of the world's lowest-cost aluminium producers, DUBAL was well-placed to weather the downturn. Accordingly, we maintained DUBAL's production levels at maximum capacity and did not retrench employees. Increased emphasis was, nevertheless, placed on controlling costs and improving the efficiency of our operations in terms of a year-long campaign which focused on reducing costs, generating and conserving cash — therefore minimizing liquidity, credit and financial risk.

Conscious efforts were also made to identify and exploit new opportunities in the market for our products. By changing our product mix to suit the changing needs of customers, our full production capacity was required to fulfil the orders. Indeed,

DUBAL in 2009 produced a record 1,010,000 metric tonnes of cast metal; and sold 1,001,257 metric tonnes of product (up 8.3 per cent on the 924,308 metric tonnes sold in 2008).

Importantly, DUBAL maintained its market position despite the financial crisis: the solid relationships built with our customers over the years enabled us to retain the business of our existing 250-strong customer base and to continue selling our metal into 44 countries worldwide. At the same time, our long-standing relationships with suppliers ensured the continued delivery of good quality materials plus constructive interaction between the technical teams of both parties, while payments were consistently honoured. Employee relationships also strengthened, as confirmed by improved satisfaction levels revealed through our employee survey.

Upstream investment opportunities were also captured in the midst of the economic downturn. For example, DUBAL purchased a stake in Companhia de Alumina do Pará,

a joint venture alumina refinery project in Brazil, along with VALE of Brazil and Norsk Hydro of Norway in April 2009. Moreover, we continued funding our active upstream projects in Guinea and Cameroon throughout the recessionary period.

In pursuit of the DUBAL vision, we remain dedicated to almost doubling the volume of metal marketed by our company by 2011. This significant milestone will be exceeded in 2010. The commissioning of Emirates Aluminium Company Limited (EMAL) Phase I, of which DUBAL is a 50 per cent shareholder, began in December 2009 and will be running at full capacity (740,000 metric tonnes per annum) by the end of 2010.

With these milestones in sight, we have virtual certainty of producing 2.5 million metric tonnes by 2015, thereby achieving our vision. We have therefore begun formulating a new vision for DUBAL, whereby we aim "to be the best aluminium company in production, markets, people and results" by 2020.



Building on our existing track record, our strong and highly experienced management team looks forward with confidence to fulfilling this new goal. Our unwavering commitment to good corporate governance, together with continuing investments in the

development of people and society, provide a solid foundation for this quest; while our determination to protect the environment and safeguard the well-being of our employees and the community will ensure that we do so in a sustainable way.

**H H Sheikh Hamdan Bin Rashid Al Maktoum**  
Deputy Ruler of Dubai, UAE Minister of Finance, and Chairman of DUBAL

## Review by the President & CEO

# Achieving excellence through partnerships

The coincidence of DUBAL's 30th anniversary, in November 2009, with the gradual recovery of the aluminium industry following the severe impacts of the global economic recession provided the valuable opportunity to consider and appreciate the factors that have enabled our company's sustained growth over the years.



We have identified several secrets behind our success, namely a combination of visionary leadership and strong management; operational excellence and a proven business model; motivated and skilled people; very good relationships with all our stakeholders; tried-and-tested home-grown technology; a strong global customer base coupled with a well-established brand name; and a positive track record in terms of growth and profitability.

Of these, the single most important and unifying ingredient is DUBAL's acknowledgement that our company's success is

inter-dependent on that of all our stakeholders. It is with this in mind that we have built our business on excellence-based partnerships with each of our key stakeholder audiences — who we have identified as our shareholders, the government of Dubai, customers, employees, suppliers, partners and our community. (Detailed descriptions of each stakeholder group, the forums and communication media used to engage and communicate with these diverse audiences, and their relative contributions to DUBAL's social sustainability are provided in the DUBAL Sustainability Report 2008/2009.) By working together, we have achieved more.

Importantly, our vision 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 people and the community. We have also implemented an aggressive growth strategy that combines organic expansions, improvements

in productivity, the formation of joint ventures to develop greenfield smelters using DUBAL's proprietary DX Reduction Technology and world-class smelter management expertise, and the implementation of partnerships to secure adequate supply of strategic raw materials such as alumina.

These developments will help position the DUBAL brand among the best aluminium producers across the globe.

### Global industry overview

The 2008/2009 global economic crisis, which began mid-2008, affected every country and every sector. In the aluminium industry, a very sharp drop in daily demand for aluminium was experienced across the world, resulting in substantial oversupply in the marketplace. The coincident 60 per cent decline in the aluminium price, set by the London Metal Exchange (LME) in the first six-months of the recession affected all primary aluminium smelters across the world, prompting some operations to close all or part of their production capacity in unprofitable plants.

Despite the rate and volume of the shut-downs, production declines lagged behind the reduced market demand: annualized supply volumes exceeded the annualized market demand by 6.2 million metric tonnes in January 2009. The imbalance in the market, evident in the increasing inventory levels, contributed to further subdued prices. Fortunately, the LME prices bottomed-out in the first quarter of 2009 and began recovering in the latter half of 2009.

For DUBAL, the global recession provided the opportunity to demonstrate the versatility, innovation, professionalism and market understanding of our company. When the market dynamics began to change from the end of 2008 onwards, we adapted our product mix to suit the new market demands. Responding to the impact of the downturn on the construction and automobile industries, both major consumers of our aluminium products, we successfully explored new markets and opportunities, secured new business, and set new production and sales records in 2009.

This was a remarkable accomplishment, given the prolonged power outage incident that occurred on 2 November 2008, affecting a sizeable portion of our manufacturing facilities. Reflecting DUBAL's philosophy of safety first, no-one was injured, and the impact of the incident on our company's 2008 production volumes was modest. Instead, the immediate implementation of a re-build project resulted in the complete restoration of the normalisation of our potroom operations by end-February 2009. The support we received throughout the restoration period from customers and suppliers alike was amazing.

Several differentiating features set DUBAL apart, which equipped us not only to survive this challenging period but rather to thrive in it. These include our premium quality, high purity products; dedication to service excellence and technology improvements; ongoing focus on succession planning; and commitment to continuous improvement so as to ensure the sustainability of our business for future generations. We also worked closely with our suppliers and our customers to find creative solutions that would contribute to their own sustainability. The combination of these attributes engendered loyalty from all our stakeholders and mutual growth. Together, we shone.

The year-long "Triple C" campaign — which focused on reducing costs, generating and conserving cash — placed DUBAL on a strong footing throughout the recessionary period and gave us a solid foundation for future economic prosperity.

These successes provided a fitting backdrop for marking the 30-year anniversary of the November 1979 start-up of the first reduction cell at DUBAL. Over the three decades, our company has evolved from a small regional operator into a world-class global player renowned for manufacturing premium quality, high purity aluminium products. Today, DUBAL is the largest primary aluminium producer in the Middle East. Our growth over the years has, however, not been achieved in isolation but through solid, long-standing, partnership-type, excellence-centred relationships with all our stakeholders.

In 1980, the first year of DUBAL's commercial operation, the annual primary aluminium production in the Middle East was

160,000 metric tonnes (1 per cent of world production). Driven by organic expansions, this rose to 1.8 million metric tonnes by 2007 (about 5 per cent of the 38 million metric tonnes produced worldwide). Following the establishment of new smelters in the Middle East over the past two years (with expansions and other new developments on the cards), the region is positioned to play an even greater role in the primary aluminium producer segment: current estimates suggest that the Middle East will produce 10 million metric tonnes of the metal by the end of this decade.

### Corporate governance

As a corporate entity, DUBAL believes that excellence in governance and business performance go hand-in-hand and that, as one of the world's leading companies, we commit to the highest ethical and governance standards in all our dealings. This is consistent with our values and fundamental to our image as a good corporate citizen. Emphasis is placed on maintaining exemplary ethical standards, personal and corporate integrity, and respect for others.

The governance structure within DUBAL, detailed more fully in the DUBAL Sustainability Report 2008/2009, comprises our Board of Directors, President & Chief Executive Officer, and Executive Management Committee. Three specialised committees facilitate the role of the Board, namely the Finance Committee, Technical Committee and Audit Committee. Several management committees are in place within the office of the President & CEO, each with a clear mandate governing its functions, notably Hedging, Governance & Internal Controls, Investment,

Credit Review, Project Tender, Purchasing Tender, Mechanical Engineering, Smelter Projects Steering, Information Technology (IT) Governance, Electrical Engineering, and Strategic Materials. A new Technology Committee was established in December 2009, under my chairmanship, to address any activity, process or structure that contributes to the development, deployment, protection, marketing and sale of DUBAL's different technologies in line with the highest international technical, environmental and safety standards, taking our corporate vision into consideration.

The day-to-day operations of our company are governed and controlled by formalised policies, procedures, systems, levels of authority and responsibility as approved by the Board. These internal control processes are designed to prevent and mitigate risks as part of an overall risk assessment and risk management function. A comprehensive risk management framework is in place, which identifies risks and quantifies their impact. This risk management framework defines the criteria for recognizing risk and also sets the acceptable level of risk of the company. A risk management strategy, comprising various actions to mitigate and transfer high-impact risks, ensures that only residual impacts are to be absorbed as part of normal course of operations.

Plans have been established to address emergencies and contingencies, such as a supply contingency plan for critical raw materials; and an IT Continuity plan. A full Crisis/Emergency & Business Continuity Management System has been implemented, as detailed on page 31.

### Protecting people and the planet

At the core of DUBAL's corporate culture is a commitment to "Zero Harm to People and the Environment", which is shared by both our regular employees and the people employed by the contractors engaged by DUBAL for project and engineering work, who also work on the site.

Several milestones were reached during the review period. For example, on the safety front, our Jebel Ali operations achieved a record 10.3 million man-hours without a lost time injury on 27 May 2009; and the total recordable injury frequency rate (per million man-hours) declined to 4.27 in 2009 — down from 13.12 in 2004. In terms of both safety and occupational health, 2009 was the third consecutive year in which no lost days due to heat-related illnesses were recorded. Environmentally-speaking, DUBAL's endeavours to reduce energy consumption and harmful emissions (particularly fluoride and perfluorocarbons) are producing results ahead of the targets set by the International Aluminium Institute (IAI).

The volume of most harmful emissions from our operations has also continued to decline: oxides of nitrogen released to the atmosphere dropped by 27 per cent between 2007 and 2009; and the metric tonnage of sulphur dioxide emitted per metric tonne of aluminium produced decreased measurably. However, the volumes of hydrogen fluoride and perfluorocarbon emitted increased in 2009, compared to prior years, arising mostly from the re-commissioning of potlines following the power outage incident in November 2008. With the plant fully re-commissioned and operating stably, the downward trend in the latter two emissions has now resumed.



### Enhancing operational efficiency through technology and innovation

Since inception, DUBAL's management has been committed to continuous innovation in the aluminium smelting process 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 smelter operations on the environment through improved energy efficiency and minimised emission levels.

This has culminated most recently in our proven, in-house developed



DX Reduction Technology — a UAE flagship technology that has been implemented in a dedicated 40-cell potline at our Jebel Ali smelter complex. Operating stably at higher amperages (approximately 370 kA), DX Reduction Technology cells offer increased productivity, improved energy efficiency and reduced environmental impact compared to lower amperage technologies, as detailed on pages 34 and 35. DUBAL DX Reduction Technology has also been licensed to and installed in the 756 cells constituting EMAL Phase I.

The first in a two-phase project to implement a gate-to-gate enterprise resource planning platform to enable efficiencies was launched at DUBAL in October 2006. After a record-breaking nine months of intensive programming and employee training, the system went live on 1 June 2007. Designed specifically for the manufacturing industry, the application will not only automate and manage DUBAL's business processes, but also assist in financial operations and supply chain and production planning. In doing so, it will help fulfil DUBAL's aim to become a demand-driven resources company and to move its entire enterprise-wide processes to a more customer-centric approach, whilst reducing costs and improving profitability.

During the second phase of SAP implementation, DUBAL continued to stabilise and expand the usage of the system. Another milestone was marked with the activation of additional modules – such as Environment, Health and Safety (EHS) and Quality Assurance (QA), which went live on 1 March 2008. Employee Self Services and Managers Self Services (ESS & MSS) were also successfully implemented. The implementation of SAP DMS

at DUBAL has allowed sharing of electronic documentation across the company. In addition, all outbound logistics and inventory management processes are managed from a single data source, through SAP.

The SAP Business Suite provides DUBAL with a complete business solution that will help us meet the company's corporate targets while maintaining DUBAL's reputation for quality products and excellent customer service

The IT department has also helped enhance operational efficiency through a successful upgrade of the Pot Control System for DX Reduction Cell technology. This includes the in-house development of the Intranet POTS (or iPOTS) web-based monitoring system, which was launched on 1 January 2008 along with an upgrade of the IT infrastructure in the smelter and deployment of proprietary software support to enable production of the highest high-purity aluminium. A web-based J2EE solution, iPOTS offers better graphic user interface (GUI) representation of data while a user-friendly drill-down menu of functions gives easy access to real-time information. An online Customer Order Tracking (COT) system has also been introduced, via the DUBAL website.

In addition, the Power Management System, which is used to monitor the power & desalination plant, has been upgraded to avoid software/hardware obsolescence and to provide sufficient capacity to support current & future plant expansions. Smelter Analytics, another in-house developed application, was launched in March 2008. This software has added an analytical layer to the existing Potroom information so as to enable informed decision-making.

### Entrenching values-driven behaviour

A comprehensive exercise, initiated in late-2005, has led to the full development of the DUBAL brand. The re-positioned, more evolved brand is being implemented throughout our organization in such a way that every point of contact between the company, suppliers, customers and business associates clearly demonstrates DUBAL's ethics, values and excellence.

The brand strategy, vision and values – designed to support the company's corporate strategic goal for 2015 – have also been translated into a new visual system that better communicates DUBAL's personality attributes. Some 925 supervisory level employees at DUBAL received brand training during 2008, in preparation for the unveiling of the re-positioned brand in early-February 2009.

During 2008, the existing DUBAL Behavioural Safety Programme was enhanced through the launch of a pilot phase of Tamahal (derived from Arabic, meaning 'slow down'), which encourages employees to slow down their pace of work to allow time to observe whether or not everything is safe before they proceed. A "no-name", "no-blame" system, Tamahal aims to identify unsafe behaviour through observation with the primary objective of giving the observed person immediate feedback on their behaviour, as well as taking appropriate action where required. The observations, all of which are recorded, provide leading indicators and actionable knowledge (unlike incidents and hazard reports). The Tamahal programme is detailed in the DUBAL Sustainability Report 2008/2009; as well as on page 31 of this review.

## Benchmarking against the world's best

DUBAL achieved re-certification to the ISO 9001:2000 and ISO 14001:2004 standards in May 2008. The company also successfully upgraded its Quality Management Systems and Occupational Health & Safety standard to ISO 9001:2008 and OSHAS 18001:2007. Re-certification to ISO/TS 16949:2009 and ISO/IEC 27001:2005 was completed in 2009. Our company also obtained certification to ISO/IEC 20000-1:2005 recently for Information Technology Service Management (ITSM).

Our Business Excellence (BE) programme is actively promoted. This company-wide umbrella programme for all in-house improvement initiatives includes team-based projects/activities and DUBAL's Suggestion Scheme. The 28th year of the Suggestion Scheme, celebrated in March 2009, brought the cumulative savings achieved since 1982 to AED85.6 million (US\$23.2 million) from a total of 87,199 awarded suggestions. New records were set in 2008, as detailed under "Quality" on page 16. As indicated under "Awards and Recognition" below, the DUBAL Suggestion Scheme received international accolades during the review period, through Ideas.Arabia, Ideas.UK, and the USA Employee Involvement Association.

Over the past two years, we have consciously re-engineered our team-based programmes using the High Performance Team (HPT) approach so as to ensure continuous as well as breakthrough improvements in our processes. In addition, our BE Programme is complemented by scientific problem-solving tools and methodologies

such as Seven Quality Control (QC) Tools and the Lean Six Sigma (LSS) approach. By enhancing the knowledge-base within our company, we have strengthened our data-driven decision-making capabilities at all levels in the organization.

The Corporate Strategy Performance Review system has been fully implemented at DUBAL using the Balanced Scorecard (BSC) format. This provides an equitable platform for motivating performance aligned with DUBAL's corporate goals and appraisal of progress against the same, while ensuring that the corporate objectives are cascaded down to all levels of the organization. The BSC system facilitates tracking of current results in terms of financial performance while helping to achieve future growth by measuring performance in terms of financial results, customer focus, internal processes, and people learning and growth.

Our BE programme, being the foundation of DUBAL's continuous improvement initiatives, is aligned to our company's BSC — which, in turn, encourages improvements in four perspectives (Financial, Customers & Business Partners, Internal Processes, and Learning & Growth). These initiatives, together, have yielded many significant improvements in our company's safety and environmental performance, quality, as well as operational effectiveness/ efficiency and reliability.

## Awards and recognition

DUBAL continues to receive local, regional and international accolades, at both corporate and individual level. In the two years under review, the company received the following:

### 2008

- The Mohammed Bin Rashid Al Maktoum (MRM) Manufacturing Award for 2008.
- 2008 Middle East Business Achievement Award (MEBA) - Businessman of the Year to Abdulla Jassim Kalban, President & CEO of DUBAL.
- Idea of the Year and Productivity Awards in the 2008 Ideas.Arabia competition.
- International Award Category in the 2008 Ideas.UK Competition.
- Idea of the Year, Overall Idea of the Year and Best Program Administrator Awards in the 2008 USA Employee Involvement Association (EIA) Competition.
- ACN Arab Technology Awards for the Best "Manufacturing and Construction Sector Implementation" in 2008 (for the implementation of Smelter Analytics).
- Excellence in Information Integrity Award 2008 (For-Profit category) – by Information Integrity Coalition, an international organization based in the USA.
- CIO 20 Middle East 2008.
- IT Governance Assurance Forum (ITGAF) Award for IT Governance in 2008.
- Major Energy Award – 1st place, Major Energy Award – Runner-up, Minor Energy Award – Runner-up, and Energy Engineer Award – Runner-up in the 2008 Emirates Energy Awards.

### 2009

- Idea of the Year, Productivity, Health & Safety and Technology Awards in the 2009 Ideas.Arabia competition.

- Power Generation and Water Solutions Transmission & Distribution Project of the Year Award 2009.
- Oracle Business Intelligence/ Enterprise Performance Management ("BI/EPM") Innovation Award 2009.
- Best Exporter in the 2009 Middle East Logistics Awards.
- Health and Safety Trophy in the 2009 Ideas.UK competition.
- Top 10 CIO Strategies Award for Middle East 2009.

## Building the business

Significant progress has been made in developing the EMAL greenfield aluminium smelter at Al Taweelah in Abu Dhabi. The EMAL Project has been designed to be the largest aluminium smelter in the world and will be built in two Phases, with an ultimate capacity of 1.5 million tonnes per annum. Phase I construction is well advanced, including a 2,000 megawatt power plant. Start-up of the 756-cell EMAL Phase I began in December 2009 — four months ahead of schedule. EMAL has deployed advanced DUBAL DX Reduction Technology and will benefit from other operational synergies with DUBAL.

In addition to EMAL, the company has been reviewing, together with partners, two other aluminium projects in the MENA region.

Further progress is also being made to secure a portion of DUBAL's alumina requirements. Two further strategic upstream bauxite/alumina projects were entered into in the review period:

- DUBAL entered into a joint venture with Hindalco of India and Hydromine of USA in November 2008, to form

Cameroon Alumina Limited as a vehicle to exploit an estimated 500 million metric tonnes bauxite reserve in Cameroon.

- In April 2009, DUBAL purchased a stake in Companhia de Alumina do Pará, a joint venture alumina refinery project in Brazil known as the CAP project, along with VALE of Brazil and Norsk Hydro of Norway.

Additional detail on these projects is provided on page 38.

## Sustainable development

DUBAL recognizes that a holistic approach to our business strategy, while seeking to realise value for all our stakeholders through a sustainable business philosophy, is critical for the company's long-term success. Accordingly, we are committed to ensuring that the business remains viable and contributes long-term benefits to society through the consideration of social, environmental, and economic aspects in all that we do.

Department managers have ultimate accountability for ensuring our contribution to sustainable development, thereby supporting progress towards our stated sustainability objectives, namely:

- Aspiring to cause no harm to people, the environment and the local community;
- Effective governance and risk management processes;
- Recognising the need to be socially responsible and to contribute to sustainable community development; and
- Ensuring the broader economic contributions of our operations are effectively injected into the local economy.



DUBAL's second Sustainability Report, for the period 2008/2009, will be released in 2010 and may be read in conjunction with this review. Both publications are an expression of our accountability and transparency, as well as being an essential aspect of our stakeholder engagement activities. Likewise, both publications are valuable management tools, as they contain a collation of performance data and statements of key issues and related management approaches.

**Abdulla Jassim Kalban**  
President & CEO of DUBAL

## Production and corporate performance

### DUBAL's core values

Our corporate vision — to be one of the top five aluminium producers in the world by 2015 — is supported by a set of corporate values, encapsulated in three words: providing, protecting and advancing.

#### Providing

Our extensive smelting operation at Jebel Ali, Dubai, is set on a 480-hectare site and provides excellent career opportunities for UAE residents. As the UAE's industrial flagship, our company provides a major stimulus to the local economy, contributing to the nation's economic stability, as well as the UAE's continued growth and development.

Our high quality aluminium products are used extensively across diverse industrial sectors, ranging from aerospace and electronics — where our company is renowned for producing the highest purity aluminium for these exacting applications; through the transport, construction and industrial sectors; to the automotive industry — where DUBAL is a leading supplier of foundry alloy.

Across the spectrum, DUBAL products and activities help improve living standards and quality of life for people all over the world.

#### Protecting

At DUBAL, we pursue our operations ever mindful of the need to protect the environment, as well as the health and safety of our employees and the community. As a corporate citizen, we respect the need to preserve precious natural resources, especially air and water.

Without exception, the management of DUBAL puts the safety and security of people and the land at the forefront of all decision-making. We endeavour to act responsibly and admirably to protect the environment by providing a safe, secure work environment, minimising harmful emissions, and adopting a 'reduce, reuse, recycle' mentality in all our activities.

#### Advancing

DUBAL, as a company, is committed to using in-house technology to perfect our processes and thereby produce the world's best quality aluminium products. Extensive laboratory research and experimentation enables us continuously to identify new mechanisms, and ways of doing things, giving our company a competitive edge that rivals the best in the industry. Additionally, we are dedicated to achieving our corporate vision to rank among the top five aluminium producers in the world by 2015.



## Providing

### Economic contributions

DUBAL's sales revenues in 2009, at AED6.92 billion (US\$1.88 billion), were sharply down on the AED9.09 billion (US\$2.47 billion) achieved in 2008, reflecting the impact of the global economic recession on the aluminium sector. Likewise, net profits fell year-on-year, giving a decline in operating margin from 24 per cent in 2008 to 15 per cent in 2009. Prudent financial management, together with the inherent flexibility in our operations to change our product mix to meet customer demands, nevertheless enabled our company to remain profitable throughout the two-year period. Cash generation from operations declined by only 5 per cent.

Reflecting the additional capacity commissioned in the plant following the completion of Potline 6B in February 2008 and ongoing productivity improvements, DUBAL's annual hot metal production in 2008 and 2009

amounted to approximately 892,000 metric tonnes and 955,000 metric tonnes respectively (a 7.1 per cent year-on-year increase). The volume of cast metal finished products amounted to about 948,000 metric tonnes in 2008 and 1,010,000 metric tonnes in 2009 (see Figure 1), marking the first time that our operations cast more than one million tonnes of aluminium in a single year.

Sales of DUBAL products over the two-year period totalled 1,925,565 metric tonnes, with the 1,001,257 metric tonnes sold in 2009 being 8.3 per cent up on 2008 (924,308 metric tonnes) and the highest-ever in the company's history. Approximately 92 per cent of our total production volume is exported each year.

DUBAL continues to contribute indirectly to Dubai's economy through the positive ripple effects created by employment (by way of disposable income and individual

career growth) and purchasing of goods and services from local suppliers. In addition, at least 40 per cent of the budget allocated to each expansion project undertaken by DUBAL is allocated to purchases from local contractors and suppliers.

With regard to raw material and equipment imports, DUBAL spent approximately AED6,719 million (US\$1,826 million) over the two-year review period on goods from nations in every part of the world, including Australia, the USA, China, Jordan, South Korea and Japan (43 countries in 2008; 17 countries in 2009). Goods were also purchased in the local market.

As reported more fully under "Community Involvement" on pages 19 to 22, DUBAL invests substantially in the socio-economic development of Dubai and its people, with specific emphasis on education, career development, sport and children; and promoting the Emirate abroad.

### Quality

DUBAL is a leader in the quality movement in Dubai, having twice won the Dubai Quality Award in the Production and Manufacturing sector (1996 and 2000). As a founding member and an investment partner of the Dubai Quality Group (DQG), DUBAL also participates actively in the non-profit organization's initiatives. For example, DUBAL founded the Ideas.Arabia subgroup of DQG to promote suggestion schemes in the Arab region and was the main sponsor of the annual Ideas.Arabia Conference for the first three years (2006 to 2008).

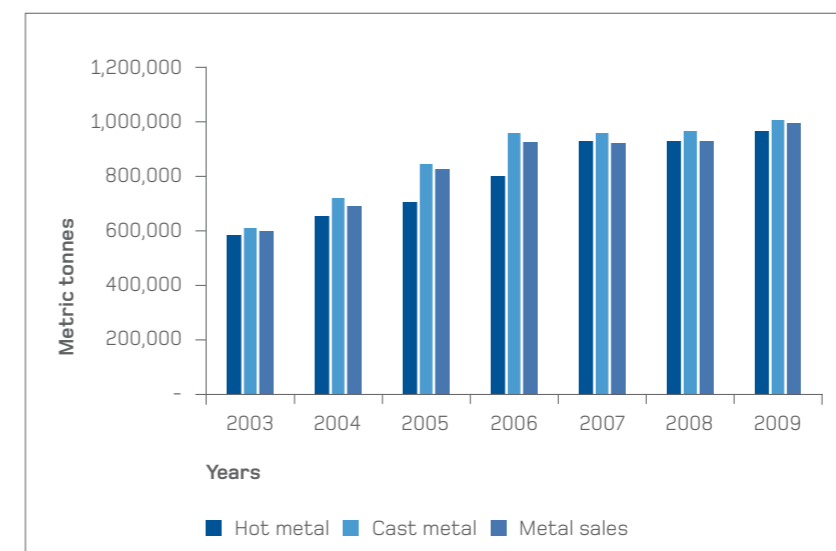


Figure 1: Production statistics (2003 to 2009).

Our company is one of the few smelters worldwide to have its entire smelter operation, power and desalination plants and engineering services accredited to the international ISO 9001:2008 Quality Management System standard. The company is also strongly committed to protecting the environment and has achieved full accreditation to the ISO 14001:2004 Environmental Management Systems standard. Four other noteworthy international certificates held by DUBAL include ISO/TS 16949:2009 standards for automotive production and relevant service part organization; Occupational Safety And Health Administration System, OSHAS 18001:2007; ISO/IEC 27001:2005 for Information Security Management Systems; and ISO 20000-1:2005 for Information Technology Service Management.

Having launched the DUBAL Suggestion Scheme in May 1981, our company is the pioneer of Employee Suggestion Schemes in the Gulf region. Today, our highly successful Scheme is widely recognized locally, regionally and internationally. Over the past 29 years, our Scheme has achieved audited, cumulative savings amounting to AED94 million (US\$25.5 million) from a total of 95,400 implemented and awarded suggestions. New records were set in 2008, when the Scheme implemented and awarded 10,725 suggestions, resulting in audited savings amounting to AED13.7 million (US\$3.58 million); and achieved 100 per cent participation from eligible employees. A further 9,447 suggestions were implemented and awarded in 2009, yielding another AED11.9 million (US\$3.23 million) in audited savings.

Many DUBAL suggestions have also won regional and international competitions, including Ideas.UK of the United Kingdom and the USA EIA, as highlighted under "Awards and recognition" on page 11.

DUBAL invited a team of renowned examiners from Union of Japanese Scientists and Engineers (JUSE), Japan to carry-out TQM Diagnosis of the company in October 2008. The visit by the team provided valuable lessons and was an informative experience for DUBAL to strive further towards its quest for excellence.

**Employees**

**Employer of choice**

DUBAL is widely regarded as an employer of choice. Evidence of this lies in the fact that our company's workforce is inherently stable: at the end of 2009, approximately 27 per cent of our employees had served at DUBAL for ten to twenty years and around 9 per cent boasted service tenure longer than twenty years.

At the end of December 2009, the DUBAL workforce comprised a total of 3,933 people representing more than 37 nationalities (2008: 4,261 employees). In terms of employment demographics, our female complement increased from 5.3 per cent in 2008 to 6.1 per cent in 2009.

The overall proportion of UAE Nationals employed by the company at the end of December 2009 was 22 per cent (the majority of our Emirati workforce, at 86.1 per cent, being male). The proportionate Emiratisation at senior management level is above 70 per cent. These levels compare extremely favourably against Dubai's average Emiratisation level of 4 per cent.

**Rewarding and retaining talent**

Acknowledging that employees rank as one of our company's greatest assets, DUBAL's compensation policy and strategies are designed to ensure maximum retention of talent. Attractive remuneration packages

are offered, comprising competitive salaries with yearly increments and an annual merit-linked bonus; health insurance; a pension plan; a travel allowance for annual leave and scholarship opportunities for employees to expand their tertiary education. The competitiveness of our compensation and benefits is reviewed regularly through participation in formal annual surveys.

In addition, the DUBAL performance management system, in place since February 2006, benefits all employees by ensuring that individual employees at all levels are evaluated bi-annually against agreed targets. The performance management system also helps drive the business by aligning individual goals to department and corporate objectives, identifying the individuals' competency levels and developing joint plans to leverage strengths and build on any weaknesses. About 99 per cent of our employees underwent performance reviews in 2009 (up from 95 per cent in 2008).

Active participation in continuous improvement is encouraged by involving all employees in the business. Five main schemes are used for this purpose, each offering substantial rewards: EHS Councils; Suggestion Scheme; Self-Actuated Teams (SAT); Continuous Improvement Teams (CITs); and High Performance Teams (HPTs), which have superseded the former Performance Enhancement Programme.

Our expansion projects, penetration into new markets and rapid adoption of new technologies have placed greater emphasis on the contribution, qualities and skills of people. Mirroring this, our Human Resources (HR) department is focused primarily on ensuring the continual availability and enhancement of human skills and capabilities to meet the business challenges at all times. Several major systems and processes are in place to support this, notably

manpower planning, job description and job evaluation systems; recruitment and succession planning processes; our performance management system; and ongoing skills training and development.

Other initiatives to retain talent include on-site accommodation for non-supervisory employees, Hajj pilgrimage sponsorship for Muslim employees, sports/leisure facilities, a CEO Special Recognition award and long-service recognition. Open communication is encouraged via several platforms, including Voice Your Opinion (internal satisfaction survey), Imtiaz (in-house journal) and the DUBAL Suggestion Scheme. Additional details on these options are provided in the DUBAL Sustainability Report 2008/2009.

**Developing local talent**

DUBAL has an active Emiratisation policy, targeted at employing and developing UAE Nationals. More than 180 UAE Nationals were employed for high skills positions across the organization during the two-year period under review (see Figure 2), bringing the total accumulative

number of new Emirati recruits hired by the company since 2000 to 1,442.

Investments are also made in training, succession planning and professional development of UAE Nationals, in keeping with company policy to develop these employees for challenging roles with increasing responsibility in the organization. DUBAL's specifically designed pre-employment courses, for example, cater exclusively for the development of skills and talent among UAE Nationals. These courses include both classroom and on-the-job training in several areas of specialisation, including craft, smelter operations and the combined discipline of power and desalination. In total, 188 UAE Nationals enrolled for DUBAL's development programmes in 2008 and 2009. On average, the number of training days per UAE National increased from 7.8 in 2008 to 8.6 in 2009 — more than double the 4.0 training days per UAE National recorded in 2006.

This investment in career development contributes indirectly to the economy of Dubai, as highlighted under "Economic contributions" on page 16.



**Investing in skills development and training**

Moreover, opportunities for training and development are offered to the workforce as a whole, resulting in an average of 5.0 training days per employee in 2009 alone. The central DUBAL Training Centre — certified by both the UK-based Institute of Leadership and Management (ILM), and Boxhill Institute of Training & Further Education, Australia — is dedicated to management skills training and the delivery of pre-employment courses. The DUBAL Training Centre is complemented by several satellite training centres located throughout the plant, which deliver function-specific theoretical and on-the-job training courses.

The DUBAL Scholarship Programme enables internal and external candidates to pursue higher studies.

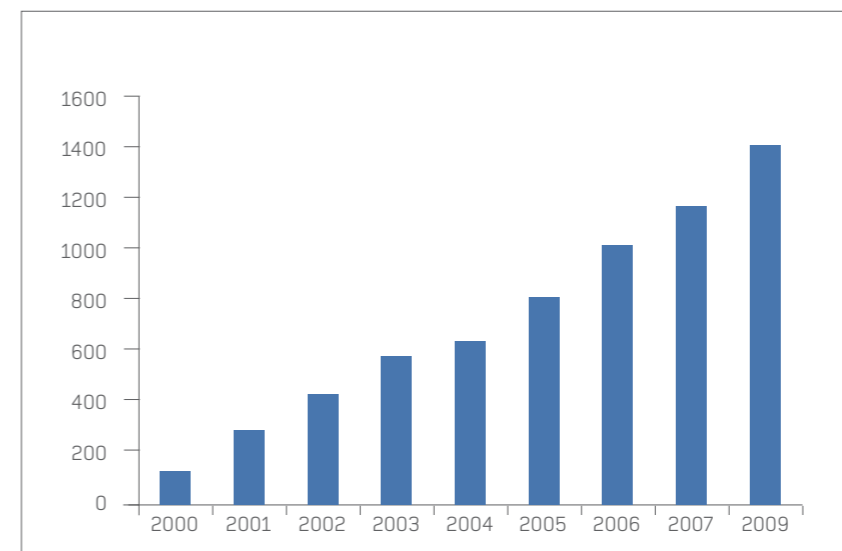


Figure 2: Number of Emiratis hired (accumulative total jobs per year).

Substantial funds are earmarked annually to help UAE high school graduates pursue post-secondary education in selected disciplines offered at various UAE institutions. This supports broader Emiratization goals and encourages young UAE Nationals to choose career paths which DUBAL can benefit from in the future. Mid-2009, DUBAL was sponsoring 56 university students enrolled for courses in various fields of engineering and administration.

Well structured, accelerated management development programmes, accredited by ILM, are offered to first line supervisors and middle managers through the DUBAL Development Pool programme; while a Senior Leadership Development programme is conducted by Ashridge Business School. An extensive range of short workshops is also offered to employees so as to develop management competencies in line with individual needs, as are opportunities to attend external courses in the UAE and abroad. The combination ensures that confident and skilled successors are in place for key leadership positions.

To further support the development of employees, our company also provides E-learning at the desktop, a Management Resource Centre equipped with books and videos, plus online access to a Virtual Learning Resource Centre.

#### Residential area

Approximately 1,500 people (including contractors) representing nine nationalities are housed within DUBAL's Residential Complex. The complex includes superb leisure facilities for sport and recreation, including:

- Three floodlit and grassed pitches for soccer, cricket and hockey
- Badminton, basketball, tennis, karate, chess, music and squash clubs

- The DUBAL Ladies' Club and Fitness Centre
- A 9-hole golf course
- A men's Fitness Centre with a full-time instructor
- A swimming pool
- A Yoga Club with an instructor
- A mosque, a church and a gurudwara
- An Angling Club and gardening facilities

There is also a Computer Club with internet access for all members. Wi-Fi hotspots have been installed at two locations, for residents to avail the facility through their personal laptops. The reading rooms have newspapers from local and international news media covering the four major nationalities accommodated in the complex. Cultural and social activities are encouraged. A dedicated back-office team provides round-the-clock reception and maintenance services.

The Residential Complex also has five dedicated restaurants, run by a reputed catering company, to suit the tastes of the Indian sub-continent, Filipinos and Arab/Western nations. Other facilities include a travel agent, ATM, supermarket, barber, tailor, barbeque centres and laundry services.

#### Community involvement

Being the industrial flagship of Dubai and the UAE, DUBAL makes significant direct contributions to the local economy. As a corporate citizen, we are also committed to fulfilling our social responsibilities by actively supporting community initiatives and the broader goals of the Dubai Government — thereby

also contributing indirectly to the socio-economic growth of Dubai, to the benefit of the Emirate's cosmopolitan population.

DUBAL's first formal Corporate Social Responsibility (CSR) policy and strategy was formulated and released during 2009. Reflecting DUBAL's positioning as a responsible business entity that is committed to sustainable development to the benefit of all our stakeholders, the DUBAL CSR Policy embodies our CSR Vision, which is to build partnerships and develop opportunities to address community needs, always adhering to world-class standards. It also gives substance to our CSR Mission, which is to consolidate DUBAL's corporate social investment through a strong focus on capacity-building, social innovation, long-term partnerships, and employee engagement in community development initiatives.

Preference is given to supporting initiatives that strengthen DUBAL's relationships with our stakeholder communities while also making a positive contribution to our business. Four major focus areas have been defined, namely:

- **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.

#### Employee engagement

Throughout the review period, DUBAL's concern for the community embraced diverse causes, from non-governmental organizations; through conferences, exhibitions and symposia; to awards; sporting events; education; and children in general. Our efforts were boosted by the establishment of the DUBAL CSR Club in 2009 as a vehicle to enhance our CSR by encouraging employees to become involved in DUBAL's social, environmental and community services programmes.

Specific examples of this include, among many others, our support for Dubai Autism Center during Autism Month 2009; our active involvement in the 2009 Emirates Environment Group (EEG) Can Collection Campaign; outreach visits to disadvantaged members of society such as Al Mamzar Geriatric Center, Al Noor Training Centre for Special Needs and Dubai Center for Special Needs; and our participation in Earth Hour (for the first time). These activities have not only strengthened DUBAL's reputation as a caring organization, but also given our people the scope to express their individual support for the community while endorsing the image and positioning of our company and the DUBAL brand. Employees are also encouraged to participate in or support community projects, whether individually or in groups, outside of the DUBAL CSR Club's scope.

Employees and their families were targeted by internal health-focused community-orientated programmes during the two-year period. These included participation in local and international events, notably World Diabetes Day, Anti-Tobacco Day

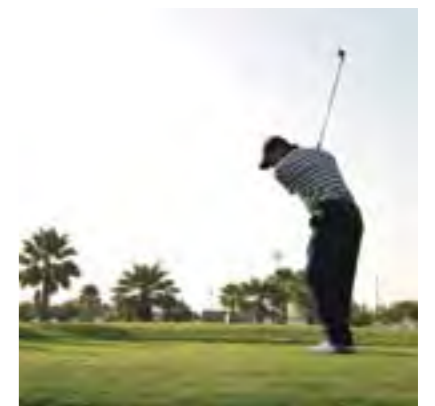
and Breast Cancer Month; and corporate Blood Donation Days in support of the local blood bank.

#### Corporate sponsorships

As in prior years, our CSR activities during the review period were strongly supplemented by DUBAL's corporate sponsorship of world-class sporting and industry events that showcase Dubai's tourism and business infrastructure to international audiences; regional award programmes that recognize and reward innovation; 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; and ad hoc initiatives that promote our industry and/or the UAE.

In the sporting arena, our major annual sponsorships remained:

- **Dubai Desert Classic:** DUBAL has sponsored this PGA European Tour-sanctioned event, held annually in Dubai, since 1989. Events such as the Dubai Desert Classic are an integral part of showcasing Dubai to international audiences. It highlights Dubai's superb tourism and business infrastructure and demonstrates the city's innovative and cosmopolitan flair. The event is organized by 'golf in Dubai'.
- **Dubai Ladies' Masters Golf Tournament:** Our company has also been the main sponsor of this annual PGA European Tour-sanctioned Dubai Ladies' Masters Golf Tournament since its inception in 2006.
- **Horse Racing:** DUBAL has sponsored the Dubai International Racing Carnival and the Dubai Winter Racing Challenge, held at Dubai's Nad Al Sheba Racecourse for several years. As of 2010, the venue for these events has changed to the new Meydan Racecourse in Dubai.
- **Jet Ski Racing:** The UAE National Jet Ski Racing Competition has been included in our sponsorship portfolio since 2005. In particular, support is provided to three-time world champion, Nadir Bin Hindi, enabling him to compete against a range of national and international champions, in the seven-heat National Jet Ski Racing Series.
- **Dubai International Arabian Horse Championship:** Since 2007, DUBAL has been a key sponsor of the annual Dubai International Arabian Horse Championship, which is held under the patronage of H H Sheikh Hamdan bin Rashid Al Maktoum, (Deputy Ruler of Dubai, UAE Minister of Finance and Chairman of DUBAL).



The company has been a corporate sponsor/investment partner to non-governmental organizations for several years, notably the DQG



and the EEG. DUBAL hosted the 13th International Arab Aluminium Conference & Exhibition (ARABAL 2008) and co-hosted the 14th Commodity Research Unit World Aluminium Conference (CRU 2009). In addition, DUBAL was the Platinum sponsor of Aluminium Dubai 2009; and also sponsored the 2008 Emirates Energy Awards and a category within the inaugural 2009 Power Generation and Water Solutions Middle East Awards (specifically the Power Generation & Water Solutions Innovation Award).

#### Charities, donations and community projects

DUBAL is wholly committed to supporting worthy and charitable activities in the community, particularly education and career development initiatives, cultural events, and children.

The second DUBAL Education Award programme ran for the duration of the 2008/2009 academic year. This competition-based initiative resulted in substantial cash rewards being presented to various schools across the UAE. During the competition, students from across the UAE were familiarized with DUBAL's facilities via plant tours and were then asked to write a report or draw a picture about their visit to DUBAL. The top entries per school were adjudicated by a panel of judges including representatives of the Ministry of Education and DUBAL.

The pilot phase of a new education-related initiative was launched at the start of the 2009/2010 academic year. Known as "DUBAL Clubs of Excellence", the concept entails establishing individual clubs (of the same name) at five different secondary schools in Dubai. The mission (and purpose) of these clubs is to create awareness among young students on specific themes that project DUBAL's objectives,

with the themes being identified on an annual basis. For the 2009/2010 academic year, the chosen theme was the importance of protecting the environment. The members of each club (all students) are required to organize field trips to DUBAL; host activities in which the environment is highlighted by conducting lectures by DUBAL employees; and so forth. The concept includes an art competition, a writing competition, outdoor activities (clean-up campaigns, tree-planting activities and so on), and visits to (or by) DUBAL, where handsome cash prizes are at stake.

#### Building the nation

As part of our Emiratization policy (described on page 18), DUBAL encourages UAE Nationals to consider occupations in industry through corporate participation in job fairs and exhibitions; DUBAL Career Days; as well as the company's well established National Development Programme. In addition to being a regular and active participant at the annual Careers UAE exhibition, DUBAL also exhibited at several career- and employer day events hosted at the major universities and tertiary colleges across the UAE during 2008 and 2009.

A new educational project was developed and implemented in

partnership with UAE University (UAEU) for the 2009/2010 academic year. The initiative — known as the "Ta'awon Programme" ('Ta'awon' is Arabic for 'co-operation') — is designed to enhance industry collaboration with prominent universities in the UAE. It embodies our commitment to giving UAEU students exceptional opportunities to work on genuine engineering problems by providing support for students enrolled in engineering colleges, with respect to their graduation projects. Through DUBAL, the students receive valuable industrial exposure. In return the students, with the help of their universities, invent solutions for real-life industrial applications, ideally providing cost-effective solutions for upgrading DUBAL's existing process requirements. Through this investment in people, DUBAL is enriching both the students and the company itself: the students tackle real issues, giving them meaningful experience in the workplace, while simultaneously granting DUBAL access to the intellectual capacity and creativity of our country's talented young engineers.

#### Community investment

In 2008 and 2009, DUBAL spent AED71.6 million (US\$19.46 million) on CSR activities, corporate sponsorships, donations and promotions. The proportional spend is illustrated below.

	2008 ('000)		2009 ('000)	
	AED	US\$	AED	US\$
Education	1,894	515	1,850	503
Environment	560	152	400	109
Charity	868	236	250	68
General	270	73	250	68
Sports	32,579	8,853	32,700	8,886
<b>TOTAL</b>	<b>36,171</b>	<b>9,829</b>	<b>35,450</b>	<b>9,634</b>

## Protecting

As a responsible corporate citizen, DUBAL acts responsibly and admirably to protect the environment and safeguard the well-being of our employees, contractors, site visitors and neighbouring communities. To this end, all potential environmental aspects, impacts and green issues relating to our company's operations are monitored closely – both by DUBAL and independent authorities such as the IAI. Emissions are tightly controlled with most internal targets being well below the legal requirements. A judicious capital investment programme, designed to sustain DUBAL's competitive advantage, is also in place.

Voluntary investments to minimise DUBAL's impact on the environment have amounted to more than US\$351 million since 2000. Of this, US\$330 million was spent on emission control equipment, such as installing environmentally-friendly low oxides of nitrogen (NO<sub>x</sub>) burners in our large gas turbines – which reduce nitrogen dioxide (NO<sub>2</sub>) emissions from 150 parts per million (ppm) to less than 25 ppm; an automated pot dig-out facility; and upgrading our baking kilns and fume treatment plants (FTPs) to ensure a safer and cleaner environment. Also, one of the critical raw materials we use for anode manufacturing has been changed entirely from solid- to liquid pitch – which poses fewer occupational health and safety hazards.

Since late-2007, after a successful trial period, DUBAL signed a contract with an Indian company for the sale of 100 metric tonnes of petroleum coke fines every month against the current production rate of 130 metric tonnes per month. This means that we are now able to recycle a large proportion of this waste material, generated by the baking kilns, thus enhancing our

efforts to protect the environment by eliminating the need to dispose of the waste to the municipal landfill.

From June 2008 onward, DUBAL (represented by the Manager, Power & Desalination Plant Performance Optimisation and the Environment Officer) effectively contributed to the programme: "Efficient Usage of Electrical Power", as a major member of the committee related to Industrial Section. This event was organised by the UAE Federal Environment Agency to implement decree Number 13/2009 of the UAE Environment & Water Minister to address the global warming concerns after the 2007 Arab Environment Ministers' Meeting in Cairo on 5 December 2007. The last meeting was held in June 2009, at which the major and fruitful energy consumption reduction initiatives we have implemented on our Jebel Ali site were communicated. These notes were incorporated among the final recommendations of the committee's programme report.

### Environment, Health & Safety

Being an industrial operation whose activities and processes have inherent potential risks, DUBAL is conscious of the need to safeguard the environment and to protect the safety and health of both its employees and residents of the surrounding communities. Since 2001, our company has operated an integrated EHS department that is responsible for minimising these risks and managing the plant's performance in these areas. Various sub-structures are in place to facilitate the associated processes, including EHS Councils, EHS Steering Committee Meetings; and SHEQ Management Review Meetings. Details of the EHS &

Technical Services department's activities and performance statistics for the review period may be found in the DUBAL Sustainability Report 2008/2009.

### Environmental management

In particular, we – as a company – acknowledge the importance of preserving precious natural resources and recognize that primary aluminium production has an inherently large environmental footprint due to the energy-intensive nature of the process. Dedicated attention is therefore focused on protecting the environment around our operations by minimising harmful air emissions and water-borne effluents, reducing our energy and water consumption levels through operating efficiencies, optimising raw material consumption levels, a deep-seated awareness of our impact on local ecology, and adopting a "Reduce, Re-Use, Recycle" mentality to minimise waste.

We aim to improve DUBAL's environmental performance continuously. This is evident in our Environmental Management System (EMS) having achieved, and maintained, ISO 14001 certification since 1999. In addition, DUBAL holds corporate membership of numerous environmental forums, such as United Nations for Environmental, Scientific and Cultural Organization (UNESCO) – since 2004; and EEG – since 1997.

A green belt concept has been implemented at our Jebel Ali site to enhance the physical environment, with specific emphasis on the Residential Complex where approximately 1,500 employees are accommodated. After careful research, Indian Almond trees were selected for the purpose, as their leaves also serve as indicators for



fluoride emission levels. In total, 1,800 trees have been planted in the green belt, which is located downwind of the potrooms.

An EIA was conducted as part of our one million tonne plus smelter feasibility studies. The aim of the EIA was to identify and quantify the additional environmental impacts that DUBAL might have due to the increased productivity from the plant. All aspects of the environment were investigated, namely air, water, land, ecology and waste. The final report is awaited and recommendations from the EIA will be incorporated into DUBAL's current environmental management programmes.

#### Optimising raw material consumption

The major raw materials used for aluminium production are alumina ( $\text{Al}_2\text{O}_3$ ), calcined petroleum coke (C P Coke), liquid coal tar pitch and alumina trifluoride ( $\text{AlF}_3$ , also known as ATF). Large quantities of water and energy are also consumed, as detailed elsewhere.

Aiming to minimise resource consumption, DUBAL has set targets for improvement on selected raw materials wherever possible. Quality control measures have been put in place for all raw materials to ensure optimum performance and productivity of the smelter, while minimising the impact of our operations on the environment. The efficiency of our production process has been improved vastly during the period, with the ratio of raw material input to aluminium production reducing by 1.7 per cent to 2.3 metric tonnes raw material per metric tonne of aluminium — despite a 7 per cent increase in aluminium production over the same period.

Alumina consumption, however, is directly related to the production of aluminium and therefore cannot be altered materially. There will always

be a ratio of around 1.92 metric tonnes of alumina per metric tonne of aluminium produced.

#### Energy efficiency

Currently, the electrical energy requirement to run our Jebel Ali smelter is more than 1,800 megawatts. Our captive power station ensures that DUBAL is virtually self-sufficient in terms of power generation; and provides valuable support to the Dubai Electricity and Water Authority (DEWA) via a 400 megawatt inter-tie arrangement, which can be used in either direction.

Aluminium production is a very energy-intensive process, specifically in terms of electricity consumption, and we therefore place substantial emphasis on conserving energy through efficiency-improving measures. For example, by improving current efficiency in our potline operations, we have achieved a 7.5 per cent reduction (a 6 per cent reduction in 2008 alone) in the energy needed for electrolysis compared to 1990, resulting in an average smelting energy consumption (across

all technologies) of 14.66 megawatt hours per metric tonne (MWh/mt) aluminium in 2008 and 14.74 MWh/mt in 2009. Moreover, the thermal efficiency of the plant improved from 33.8 per cent in 1999 to 43.3 per cent in 2008.

Our in-house developed DX Reduction Technology (detailed on pages 34 and 35), installed in a dedicated 40-cell potline, offers significantly higher energy efficiency, with specific energy consumption of 13.05 kilowatt hours per kilogram (kWh/kg) aluminium and 95.7 per cent current efficiency. This translates into measurable energy conservation and associated operating cost reductions, as well as reduced environmental impact through lower fossil fuel consumption.

The IAI is targeting a 10 per cent reduction in the use of direct current (DC) energy for electrolysis within the global aluminium industry by 2010 (from 1990 levels). DUBAL is committed to meeting this target and in 2009 the energy consumption by our plant, at 14.7 DC MWh/mt aluminium, was 5.4 per cent down on the 15.5 DC MWh/mt aluminium recorded in 1990 (see Figure 3).

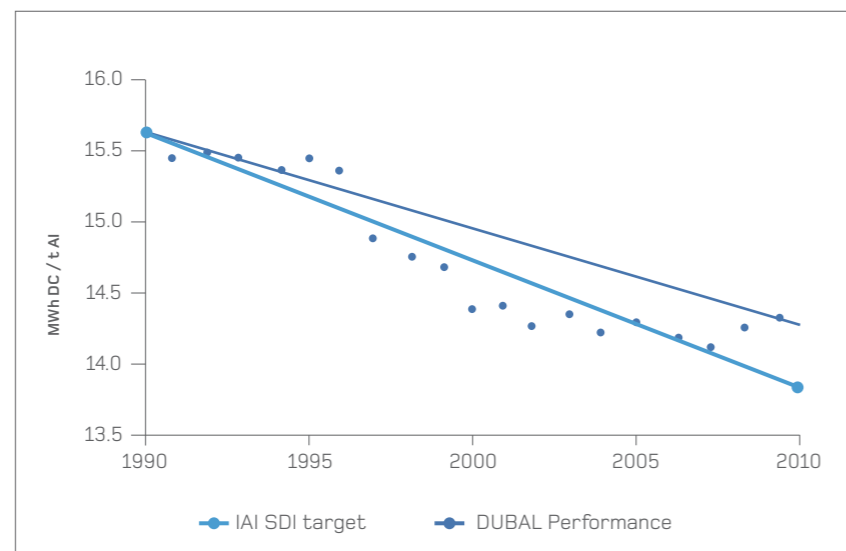


Figure 3: DC energy used for electrolysis (1990 to 2009).

#### Minimising harmful emissions

DUBAL employs the best available technology for aluminium production as well as for minimising air emissions, which are generated primarily by our power plant and smelting operations. Ambient air monitoring stations are located strategically throughout DUBAL's premises. The units measure a number of parameters, including emission levels of oxides of nitrogen ( $\text{NO}_x$ ), sulphur dioxide ( $\text{SO}_2$ ), hydrogen fluoride (HF) and particulate matter ( $\text{PM}_{10}$ ). Recorded data is delivered on-line to the Environmental Laboratory every two hours, enabling comprehensive reporting and quick decision-making.

Our power generation activities generate carbon dioxide ( $\text{CO}_2$ ), carbon monoxide (CO),  $\text{SO}_2$ ,  $\text{NO}_x$  and  $\text{PM}_{10}$ . The choice of a combined cycle power system has enabled marginal reductions in  $\text{CO}_2$  emissions (through higher efficiencies) through lower consumption of hydrocarbon energy. As of December 2005, roughly 30 per cent of DUBAL's entire power generating needs (more than 1,800 megawatts) has been supplied through steam turbines.

Moreover, DUBAL uses gas as a fuel source, secured through long-term contracts, which is the 'cleanest' of the fossil fuel types (as indicated by lower emission volumes of  $\text{SO}_2$ ,  $\text{NO}_x$  and  $\text{PM}_{10}$ ). The installation of six state-of-the-art combustion systems (low  $\text{NO}_x$  burners) in the power plant is reducing our  $\text{NO}_x$  emissions in line with world standards: the level of  $\text{NO}_x$  emission at DUBAL dropped by 27 per cent between 2007 and 2009. Over the two-year review period, our total  $\text{SO}_2$  emissions increased in line with increased production levels, however the metric tonnage of  $\text{SO}_2$  emitted per metric tonne

of aluminium decreased due to reduced consumption of distillate fuel and lower sulphur content in the petroleum coke used.

The major air emission from our smelting operation is HF, which is a particularly noxious gas. Under normal operations, chemical recycling via high-efficiency FTPs helps contain the plant's HF emission levels. Indeed, in a 2005 benchmarking study, DUBAL had the second-lowest level of fluoride emissions resulting from the production of anodes. The company placed first in the particulate fluoride category, had the second-best performing smelter and rated third for total fluoride emissions.

However, the volume of HF emitted in 2008 and 2009 increased over prior years, primarily attributable to the re-commissioning of potlines following the incident in November 2008: HF emissions increased from 0.55 kilograms per metric tonne (kg/mt) aluminium to 0.64 kg/mt aluminium over a four-month period. To ensure stricter management of our air emissions, our on-site ambient air quality monitoring system has been extended and improved. The system includes a HF Monitoring Network, which provides real-time data for HF roof emissions — thus enabling quick remedial action in response to any changes detected. A Continuous Emissions Monitoring System (CEMS) is being installed in all our potlines and the target for total fluoride emissions from our Jebel Ali site has been set at less than 0.55 kg/mt aluminium.

DUBAL's greenhouse gas (GHG) emissions — which primarily comprise  $\text{CO}_2$  and perfluorocarbons (PFCs) — are closely monitored. In total, our operations emitted 7 million metric tonnes and 8 million metric tonnes of  $\text{CO}_{2\text{eq}}$  in 2008 and 2009 respectively.



The main sources of GHGs at DUBAL are mobile equipment and vehicles; natural gas consumed in the furnaces, baking kilns and rodding room; anode consumption during the aluminium reduction process; PFC emissions from abnormal pot operating conditions ('anode effects'), either as tetrafluoromethane ( $\text{CF}_4$ ) or hexafluoroethane ( $\text{C}_2\text{F}_6$ ) which have a GHG warming potential respectively of 6,500 and 9,200 times greater than  $\text{CO}_2$ ; and our power generation activities.

A programme has been initiated to facilitate stricter control over anode effects and thereby reduce PFC emissions. The primary aim of the programme is to decrease the number and duration of anode effects, through changes in alumina feeding mechanisms, thus minimising the generation of PFCs. It is estimated

that the programme will reduce our annual GHG emissions by approximately 20,000 metric tonnes of CO<sub>2eq</sub>.

This will support DUBAL's efforts to achieve the IAI's target to reduce PFC emissions by 80 per cent by 2010 and 93 per cent by 2020 (from 1990 levels). By 2008, DUBAL had achieved a 77 per cent reduction in PFC emissions (compared to 1990), to 0.034 kg PFC/mt aluminium. Unfortunately, the incident that took place in November 2008 interrupted this trend, such that our PFC emissions in 2009 were only 67 per cent lower than in 1990. Operations management is nevertheless confident of achieving the voluntary 80 per cent reduction target by 2010 (see Figure 4).

#### Carbon management

Acknowledging that CO<sub>2</sub> is the most common GHG and therefore the main cause of global warming, DUBAL in 2009 developed a 2015 Carbon Management Strategy and Implementation Plan that will help our company

reduce its carbon footprint. The plan targets reductions in carbon consumption and emissions from every aspect of our business.

In addition, DUBAL has signed an agreement with Masdar (Abu Dhabi's zero carbon, zero waste city) to identify opportunities for PFC reduction in the potlines.

#### Water management

Our smelter operation at Jebel Ali is unique in that we generate our own electricity and produce our own water. Our plant is not only self-sufficient in terms of these resources, but is also able to supply both to off-site concerns.

Large volumes of seawater are abstracted from the Arabian Gulf by our operations, of which approximately 74 per cent is used for cooling purposes and the remaining 26 per cent is desalinated using a multi-stage flash evaporator and filtration system. The water returned to the sea comprises cooling water (78 per cent) and brine discharge (22 per cent) from the desalination

process. As the brine discharge is typically hotter and more saline than the surrounding seawater at the discharge point, the two types of water discharge are combined and cooled to ensure it is within environmental standards before being returned to the ocean.

Our desalination plant produces two types of water: distilled water (12 per cent of the total), the bulk of which is used for industrial applications within DUBAL; and potable water, of which a small proportion is used for on-site domestic requirements. The major proportion of the potable water we produce (94.9 per cent in 2009) is sold to external customers via our dedicated water tanker filling station, or via pipelines to DEWA and adjacent industries.

Despite the ready availability of water at DUBAL, our company consciously strives to conserve and recycle this precious resource. For example, the water tanker filling station has been re-engineered to capture spilled water, which is now used to irrigate the landscaped areas 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 sewage treatment plant operations yielded increased volumes of grey water in 2009, effectively reducing DUBAL's reliance on potable water for irrigation purposes.

In addition, the desalination plant has installed additional flow meters in various areas throughout DUBAL to better manage our water consumption; while preventative maintenance helps minimise water wastage and losses.

#### Waste management

In compliance with DUBAL's ISO 14001 certification and legal requirements, a comprehensive

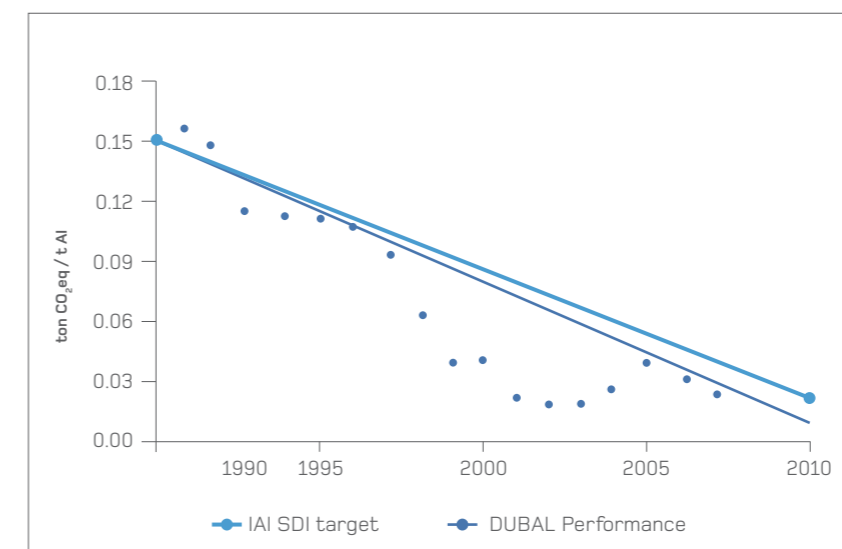


Figure 4: PFC emissions (1990 to 2009).

Waste Management System is in operation. This includes waste segregation at source, transportation, contractor compliance and appropriate handling and treatment of hazardous materials.

Most of the waste generated by our operations (by weight) comprises spent pot lining (SPL) and spent anodes. Other waste includes dross metal, scrap metal and non-hazardous process waste; plus hazardous medical and liquid waste. The volume of waste generated in 2008, at 322,439 metric tonnes, was 17 per cent higher than in 2007 — reflecting a doubling in anode waste due to the need to re-line pots following the incident in November 2008. A marginal decline to 332,369 metric tonnes was recorded in 2009.

Waste recovery and recycling remain key areas of focus. This led to 87 per cent and 86 per cent of waste being recovered in 2008 and 2009 respectively (including aluminium scrap, spent anodes and dross) — a large proportion of which was fed back into the production process as raw material. Other waste streams are recycled, landfilled or treated on site. For example, the liquid waste from our Jebel Ali site is treated on-site and the sludge residue is disposed of at a hazardous waste landfill site. No DUBAL waste is shipped internationally.

Good progress was made during the review period in terms of recycling SPL-refractory material as an alternative fuel and raw material (AFR) for the cement industry. After extensive consultation with the major cement industry players in the UAE, a formal agreement was signed with Union Cement Company (UCC) in Ras Al Khaimah and several loads of SPL have been shipped to UCC. This development has effectively diminished the need to send SPL to a hazardous waste site.

**Ecology and biodiversity**

The 20 square-kilometre Jebel Ali Wildlife Sanctuary is located approximately 7 kilometres 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.

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 been fairly severe, with 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. This includes the green belt concept mentioned under “Environmental management” on page 24.

Going forward, DUBAL is committed to continually performing marine surveys, monitoring the plant’s effluents and deploying independent technical expertise to ensure that the impact of our operations on the environment is minimised.

**Employee Health and Safety**

From the outset, DUBAL has placed the highest priority on ensuring the occupational health and safety of the company’s employees and contractors. Formal policies and procedures are in place; and personal protective equipment (PPE) appropriate to each area of operation is issued to employees and contractors (including hard hats, goggles, hearing protection, heat-resistant gloves, industrial boots, masks with particulate and gas filters,

and process-resistant garments). DUBAL officially maintains the OSHAS 18001 Occupational Health and Safety Management System, having been re-certified to OSHAS 18001:2007 in 2009.

**Occupational health and hygiene**

Acknowledging that there are several health risks inherent in the aluminium production process, DUBAL has introduced policies to improve the monitoring and management of our employees’ general health. For instance, all employees working in operational areas undergo a series of medical tests every two years, allowing the early detection of any occupation-related health illnesses, abnormalities or unusual circumstances.

With regard to occupational health and hygiene (OHH) in particular, special emphasis is placed on reducing exposure to the prevailing risks — particularly noise-induced hearing loss, inhalation of hazardous gases and dust particles, and exposure to high ambient temperatures. Appropriate PPE is issued to employees to mitigate the risks of their respective occupations and places of work.

Since the start of the new millennium, our company has actively pursued a quest 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, evolving into the dedicated “Beat the Heat” campaign. 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).

Other initiatives implemented and managed by our dedicated OHH department include:

- Profiling job descriptions with regard to potentially harmful physical and chemical hazards in the working environment and monitoring worker exposure.
- Pre-employment medical examinations, including chest x-rays, audiograms, optometric assessments and lung function tests.
- Regular follow-up medical examinations for early detection of medical conditions, scheduled according to workplace exposure to potentially harmful physical and chemical hazards.
- An ongoing awareness campaign to raise understanding of and personal accountability for illnesses and conditions such as diabetes, swine influenza, obesity, high blood pressure and so forth.

**Safety**

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 5).

Overall, the total number of lost days due to OHH-related causes decreased to 121 and 55 days in 2008 and 2009 respectively, compared to 473 days in 2006.

Moreover, on 27 May 2009, regular employees within our smelter operations achieved a remarkable



safety record of 10.3 million man-hours worked (399 days) without a lost time injury (LTI). The milestone approximated 15.4 million man-hours when the safety performance of contractors’ employees engaged for project work on the site, over the same time period, is factored in. Also, DUBAL Projects achieved zero LTI for 29 months, equating to 14.8 million hours.

Given that the main risks are heavy machinery and vehicles, extremely hot molten metal and high amperage electrical circuits, the formal interventions include:

- Safety training for all new recruits, with follow-up refresher training at appropriate intervals.
- Restricted access to operational sites.

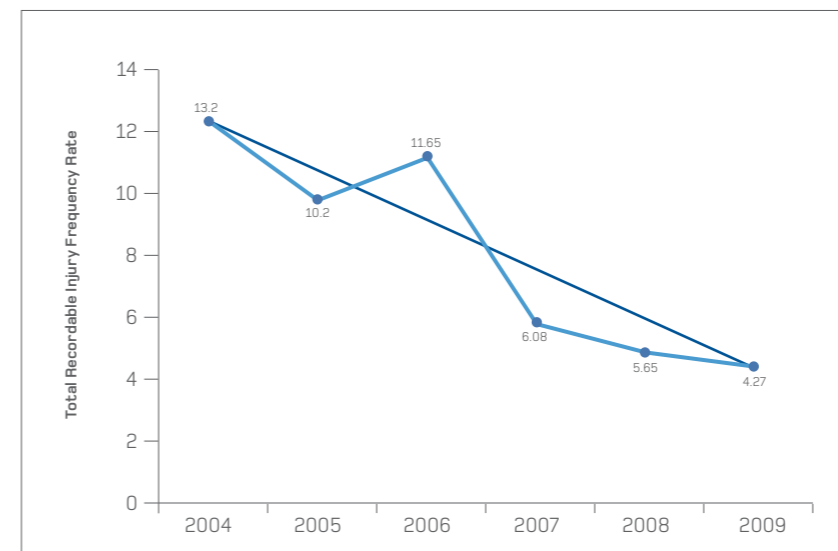


Figure 5: Total recordable injury frequency rate (2004 to 2009).

- Safety-driven operating rules within the facility, including strict occupational hygiene standards.
- Campaigns to reinforce awareness of DUBAL's safety regulations.
- Reporting systems for risky behaviour and potential hazards, which have led to substantially less lost time incidents as well as a reduction in the severity of incidents.

The pilot phase of a new behaviour-based safety system known as Tamahal (Arabic for 'slow down') was introduced in 2008 and a gradual roll-out across the site took place in 2009. The aim of Tamahal is to encourage employees to take the time to observe whether or not everything is safe before they proceed. The system uses awareness sessions, formal training sessions, coaching and mentoring, feedback meetings, recognition and rewards in a psychological process to address basic employee needs while emphasising the importance of safe behaviour. To ensure the most positive results are obtained, employees are engaged and consulted in the process; and guided in a positive way towards safer behaviour practices. Further details of the Tamahal programme can be found in the DUBAL Sustainability Report 2008/2009.

#### DUBAL Medical Centre

DUBAL Medical Centre (DMC) is one of the most modern medical centres at an industrial site in the UAE. It provides healthcare services to all employees under the guidance of highly experienced and qualified medical professionals supported by specially trained medical and administrative staff.

The DMC operates 24 hours-a-day and is fully fledged, comprising most modern medical equipment and facilities such as X-ray, laboratory, defibrillators and ambulances with in-built/mobile clinical facilities.

The DMC provides primary health care, occupational health surveillance, emergency services and in-patient services, with a capacity of five beds and two private rooms. The number of visits to DMC exceeded 30,000 in 2009.

As mentioned earlier, a dedicated OHH department works closely with DMC and is responsible for matters relating to employees' occupational health and hygiene. Its activities include a systematic programme that monitors the effects of substances and environmental conditions that could be hazardous or detrimental to employees' health (such as dust, gas, noise and heat).

#### Asset Protection and Business Continuity

DUBAL has completed the implementation of both phases of a comprehensive Crisis/ Emergency and Business Continuity Management System (DCEBCMS) to ensure effective control of any crisis, emergency situation or business interruption. Teams have been formalized at various levels in the organization in order to reduce the risks (a proactive approach) and prompt structured response in case of any emergency business situations.

The second phase of the DCEBCMS began in 2008 and involved building the Business Continuity part of the system for DUBAL. This entailed two steps — Business Impact Analysis (BIA); and preparation of Business Continuity Plans (BCPs) — which were completed with the assistance of consultants from Australia during 2009.

Our Security & Fire department has also initiated the installation of a fully integrated electronic access control system, including surveillance cameras and closed circuit television (CCTV). This development will ensure that our site complies with UAE legal requirements while enhancing business security management.



# Advancing

## Operating performance

DUBAL's annual hot metal production in 2009 amounted to 955,404 metric tonnes, up 7.1 per cent on the 891,723 metric tonnes achieved in 2008; while the volume of cast metal products manufactured in 2009, a record 1,009,772 metric tonnes, rose by 6.5 per cent year-on-year (2008: 947,507 metric tonnes). In total, 1,001,287 metric tonnes of product was sold in 2009 – 8.4 per cent higher than in 2008 (924,308 metric tonnes) and the highest-ever in DUBAL's history.

Since its inception in 1979, DUBAL has evolved into one of the world's largest smelters with a captive power station. Over the years, our company has undergone a series of sequential expansions, resulting in the number of aluminium reduction cells within our Jebel Ali plant increasing from 360 in three potlines at start-up to a current

total of 1,573 cells in eight potlines. The latest expansion phase — Potline 6B — was completed by February 2008 and entailed the industrial scale implementation of 40 DUBAL DX Reduction Technology cells. The operational area has since been re-named Potline 8.

These expansions, using in-house developed technologies together with amperage increases and efficiency improvements (known as 'creep'), have resulted in compound annual growth in production of more than 9.6 per cent since 1995. Continued growth in hot metal production is expected, driven by further creep, such that DUBAL's inherent hot metal production capacity now exceeds one million metric tonnes per annum. The growth trend is depicted in Figure 6.

Several major production milestones were achieved during the review period, notably:

- The production of DUBAL's 10 millionth tonne of hot, molten aluminium in mid-July 2008;
- Casthouse production exceeding one million metric tonnes in one year, for the first time ever, in 2009; and
- Greenmill producing DUBAL's six millionth green anode in August 2009.

Concurrent expansions have taken place within the Power & Desalination Operations, resulting in the power generation capacity at DUBAL reaching above 2,335 megawatts by early December 2009 (at 35°C ambient). The power generation capacity increase was not only a result of additional units' installation, but also implementing power augmentation projects such as upgrades of gas turbines and the installation of evaporative coolers in the large gas turbines' inlet structure. The evaporative cooler project increased the overall generating capacity by an annual average of 53 megawatts. The additional generation capacity is illustrated in Figure 7, spread over the months during the year 2008 (see page 35).

## Technological innovation

The years 2008 and 2009 have been key in the development of DUBAL's proprietary DX Reduction Technology, the successful and sustained performance of which has not only been demonstrated on an industrial scale in Potline 8 of DUBAL but has also been brought to the level of the best available technologies available in our industry today. This success dates back to 2006, when DUBAL decided to build a demonstration line of 40 DX Reduction Technology pots at

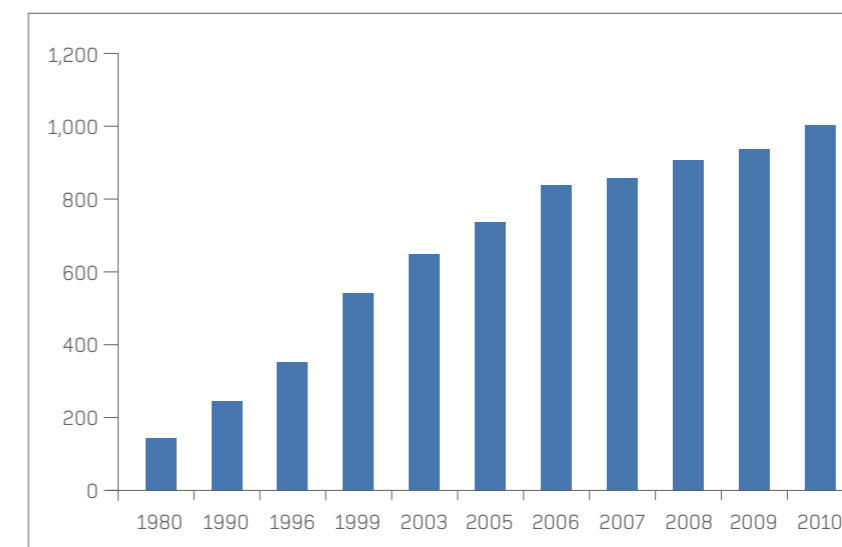


Figure 6: Growth in smelter capacity (1980 to 2010).



our smelter in Jebel Ali. This potline, re-named Potline 8, was started-up in February 2008 with the following objectives:

- Being a demonstration line;
- Achieving world-class performances; and
- Being a training platform for personnel of EMAL personnel and future projects.

All these objectives have been achieved, making DX Reduction Technology a flagship innovation of the UAE.

Operating stably at high amperages, DX Reduction Technology reduction cells offer several benchmark attributes that provide significant advantages, notably (at 370 kA plus):

- Superb productivity of 2.8 metric tonnes of aluminium/pot/day plus at exceptionally high purity levels of better than 99.93 per cent, giving rapid returns on capital expenditure; plus excellent creep potential, promising even better yields per pot.

- An energy-efficient design that enables specific energy consumption of 13.05 kilowatt hours/kilogram aluminium and 95.7 per cent current efficiency, together contributing 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 kilograms carbon/kilogram aluminium. Moreover, DX Technology cells experience minimal anode effects (0.018 AE/pot/day), resulting in perfluorocarbon emissions of less than 0.01 metric tonnes CO<sub>2eq</sub>/metric tonne aluminium.
- Fully engineered versatility — featuring proven magnetically efficient busbar configuration, anode configuration, superstructure, shell and lining designs, process controls and operational practices — allowing operating capability plus inherent potential for developing even higher amperage performance capacity.

Over the same period, DX Reduction Technology has been licensed to and installed in the 756-cell EMAL Phase I smelter complex at Al Taweelah, Abu Dhabi.

During the two years under review a large proportion of our company has mobilised to support the EMAL project through technology transfer and technical support. The most important items to be mentioned are:

- Development of a comprehensive DX technology package, delivered as scheduled to EMAL.
- Delivering our proprietary, in-house developed DUBAL pot control and potline supervision system, as per schedule.
- Technical assistance on-site.
- A training or familiarisation programme for EMAL personnel in all fields of a smelter's activity, as planned, for 1,233 EMAL employees and implemented as scheduled.

**Market penetration**

DUBAL markets its high quality products throughout the world, largely through direct dealings with more than 250 customers in about 45 countries across the world. The key markets served by our company are the Far East, Europe, the ASEAN region, the MENA region, and North America (see Figure 8 on page 36). Our marketing strategy is to sell directly to end-users wherever possible. A network of sales facilitators has nevertheless been established in key markets, where a direct sales force is not practical or untenable. Freight forwarders and warehouses facilitate the delivery of finished products to the customer's plant, especially in Europe.

Emphasis is placed on developing and nurturing strong, enduring links with customers. The result is long-term relationships that

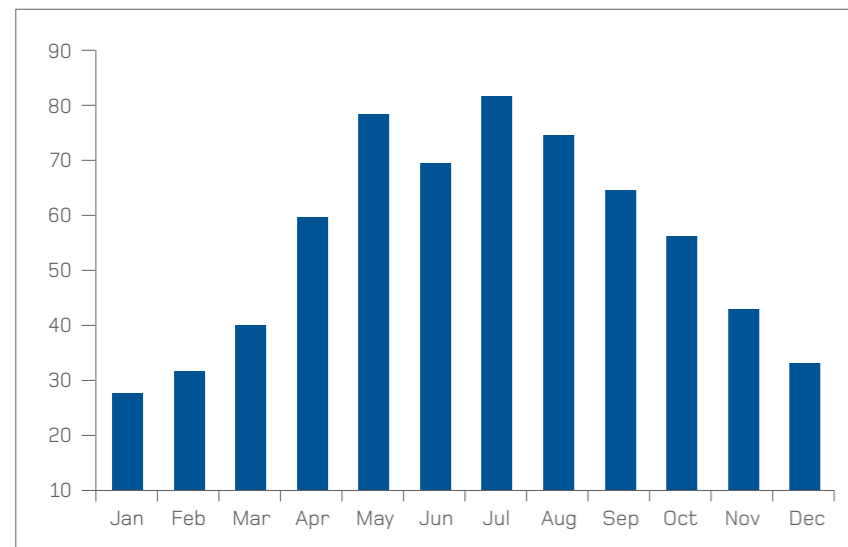


Figure 7: Increased power generation capacity at DUBAL during 2008, due to evaporate cooling.

promote joint interests. We are very proud of our marketing and sales team, which comprises UAE Nationals who have been trained by DUBAL in collaboration with the world's best institutes and universities over the past few years. This team represents the company internationally, at the highest level.

Today, DUBAL is widely acclaimed as a leading producer of automotive foundry, and high-purity ingot, and extrusion billet. In total, the company manufactures 112 individual product lines, of which more than 70 are made to customer specifications. Extrusion billet production in 2009, at just over 519,072 metric tonnes, was the highest-ever and accounted for 51.4 per cent of total production. Foundry alloy production represented 23.6 per cent of the total, with pure and high purity metal accounting for 22.4 per cent. Anode bars and busbars accounted for the balance (see Figure 9).

A comprehensive exercise, initiated in late-2005, has developed the DUBAL brand fully.

The re-positioned, more evolved brand is in the process of being implemented throughout the organization in such a way that every point of contact between the company, suppliers, customers and business associates clearly demonstrates DUBAL's ethics, values and excellence.

The brand strategy, vision and values – designed to support the company's corporate strategic goal for 2015 – have been translated into a new visual system that better communicates DUBAL's personality attributes.

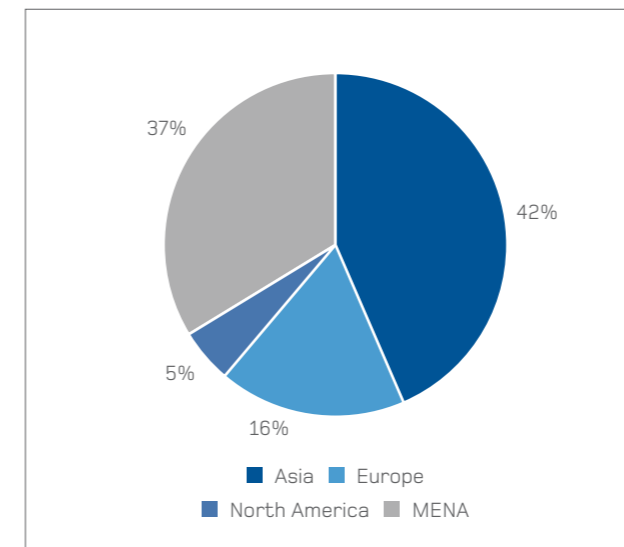


Figure 8: Market penetration, 2009.

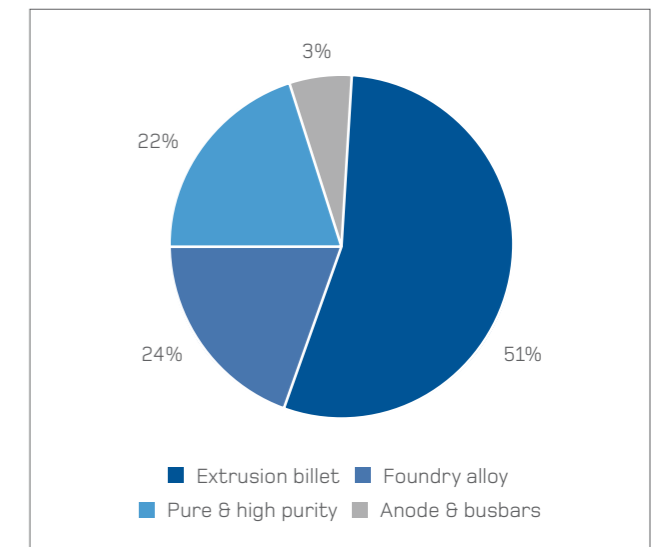


Figure 9: DUBAL's product mix, 2009

## Our investments

In support of our vision, we have taken a two-pronged approach:

- Expanding our core smelting operations, both organically and through greenfield developments through our joint venture with Mubadala Development Company (Mubadala) and
- Pursuing upstream investments to secure a portion of our alumina requirements.

### Additional smelting operations

Our major smelter development project is EMAL, a 50:50 joint venture with Mubadala, which was established in February 2007 to construct what will become the world's largest single-site aluminium smelter complex. The project is being built in two Phases and EMAL will produce approximately 750,000 metric tonnes of aluminium per annum at the end of Phase I (2010) and 1.5 million metric tonnes annually at the end of Phase II. DUBAL DX Reduction Technology has been licensed to EMAL Phase I (see pages 34 and 35). The aluminium complex, a 6 sq. km site in the Khalifa Port Industrial Zone in Al Taweelah, half-way between Abu Dhabi and Dubai, will produce primary aluminium with a product mix of sow, standard ingot, tee ingot, extrusion billet and sheet ingot.

Being the largest industrial project in the UAE outside the oil and gas industry, the project will encourage economic diversification, creating downstream opportunities. This development will benefit the UAE economy, employing more than 17,000 local and international contractors/ staff during construction and giving approximately 2,000 people direct employment once operational.

EMAL aims to meet the strict environmental standards set by the Abu Dhabi Environmental Agency, with

state-of-the-art emission control equipment including SO<sub>2</sub> scrubbers, the latest potroom gas treatment technology, the best-available gas turbine systems, and cooling towers to eliminate thermal stress on local marine life.

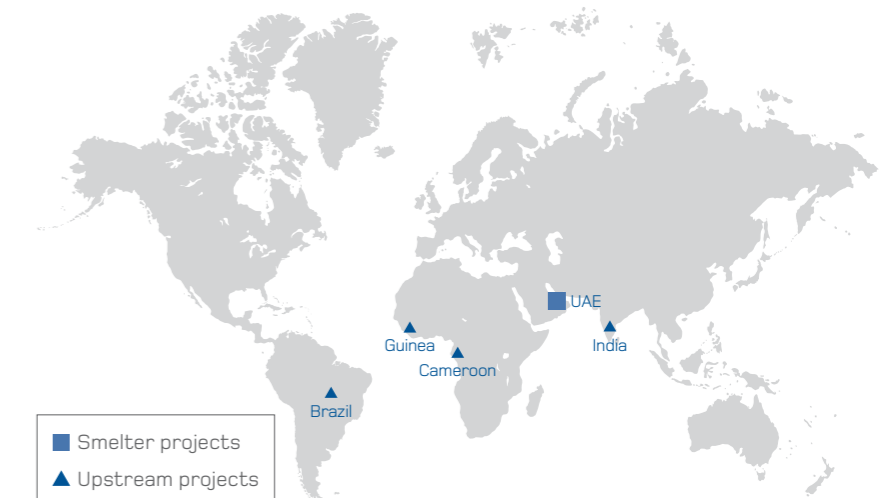
DUBAL will market the metal produced by EMAL. This will amount to approximately 260,000 metric tonnes of cast aluminium in 2010, ramping up to full capacity thereafter.

In addition to EMAL, DUBAL is reviewing, together with Mubadala and partners, two other aluminium projects in the MENA region which, after feasibility studies are completed, will also benefit from DUBAL technology, project execution and operational expertise.

### Upstream projects

With regards to alumina feedstock, DUBAL is in partnerships to develop strategic upstream bauxite/alumina projects, namely:

- Companhia de Alumina do Pará ("CAP"), Brazil — This is a joint venture with VALE of Brazil and Norsk Hydro of Norway to build an alumina refinery in Brazil close to VALE's existing refinery. The CAP refinery will have an initial capacity of 1.86 metric tonnes per annum, but
- Guinea Alumina Corporation ("GAC"), Republic of Guinea — This project entails the development of a 3.3 million metric tonne per year alumina refinery with associated bauxite mine in the Republic of Guinea. DUBAL has a 25 per cent equity stake in the project as well as an off-take of 40 per cent of the production. This project is a joint venture with BHP Billiton, Mubadala and the original promoters, Global Alumina.
- Cameroon Alumina Limited ("CAL"), Cameroon — DUBAL (45 per cent), Hindalco of India (45 per cent) and Hydromine of USA (10 per cent) have formed this joint venture company to exploit the 500 million metric tonnes bauxite ore in Cameroon. A mining license is expected in 2010.
- Raykal, India — A joint venture with Larsen & Toubro in India, Raykal plans to develop a 3.0 million metric tonne per year alumina refinery with associated bauxite mine in Orissa. DUBAL currently holds 74 per cent equity in the joint venture.



## DUBAL's strategic vision

As stated on pages 3 and 14, DUBAL's vision is "to be among the world's top five primary aluminium producers by 2015".

However, since formulating our vision in 2005, we now have virtual certainty of achieving that and accordingly, we have revisited our corporate vision "to be the best aluminium company in production, markets, people and results" by 2020. Rather than purely chasing size, we are now focusing on doing everything to the very best, most exacting standards, as outlined below:

- **Production** – Operational Excellence; World-class Technology; High quality, Efficiency & Productivity.
- **Markets** – Exceed Customer Expectations; Quality Products and Services; Earn Market/Product Premiums.
- **People** – Recognised as Employer of Choice; Opportunities for UAE Nationals; Quality, Motivated People.
- **Results** – Superior Profitability; Shareholder Value Creation; Economic Contribution to Dubai.



# Glossary

AE	Anode Effect
AED	Arab Emirates Dirhams
AFR	Alternative Fuel and Raw Material
ARABAL	Arab Aluminium
ASEAN	Association of South East Asian Nations
ATM	Automated Teller Machine
BCP	Business Continuity Plan
BE	Business Excellence
BIA	Business Impact Analysis
BSC	Balanced Scorecard
CAL	Cameroon Alumina Limited
CAP	Companhia de Alumina do Pará
CCTV	Closed Circuit Television
CDM	Clean Development Mechanism
CEMS	Continuous Emissions Monitoring System
CEO	Chief Executive Officer
CIT	Continuous Improvement Team
CO	Carbon monoxide
CO <sub>2</sub>	Carbon dioxide
COT	Customer Order Tracking
CRU	Commodities Research Unit
CSR	Corporate Social Responsibility
DC	Direct Current
DCEBCMS	DUBAL Crisis/Emergency and Business Continuity Management System
DEWA	Dubai Electricity and Water Authority
DMC	DUBAL Medical Centre
DQG	Dubai Quality Group
DUBAL	Dubai Aluminium Company Limited
EEG	Emirates Environment Group
EHS	Environment, Health & Safety
EIA	Environmental Impact Assessment
EMAL	Emirates Aluminium Company Limited
EMS	Environmental Management System
ESS	Employee Self Services
FIFR	Fatal Injury Frequency Rate (per million man-hours)
FTP	Fume Treatment Plant
GAC	Guinea Alumina Corporation
GHG	Greenhouse Gas
GRI	Global Reporting Initiative
GUI	Graphic User Interface
HF	Hydrogen fluoride
H H	His Highness
HPT	High Performance Team

HR	Human Resources
IAI	International Aluminium Institute
ILM	Institute of Leadership and Management
ISO	International Organization for Standardisation
iPOTS	Internet POTS
IT	Information Technology
ITGAF	IT Governance Assurance Forum
ITSM	Information Technology Service Management
JUSE	Union of Japanese Scientists and Engineers
kA	Kilo-Amperes
kg/mt	Kilograms per metric tonne
kWh/kg	Kilowatt hours per kilogram
LME	London Metal Exchange
LSS	Lean Six Sigma
LTI	Lost Time Injury
LTIFR	Lost Time Injury Frequency Rate (per million man-hours)
MEBA	Middle East Business Award
MENA	Middle East North Africa
MRM	Mohammed Bin Rashid Al Maktoum Awards
MSS	Management Self Services
MWh/mt	Megawatt hours per metric tonne
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
PFC	Perfluorocarbon
PGA	Professional Golf Association
PM	Particulate Matter
ppm	Parts Per Million
QA	Quality Assurance
QC	Quality Control
SAP	Systems Applications and Products in Data Processing
SAT	Self-Actuated Team
SHEQ	Safety, Health, Environment and Quality
SPL	Spent Pot Lining
SO <sub>2</sub>	Sulphur dioxide
TRIFR	Total Recordable Injury Frequency Rate
UAE	United Arab Emirates
UAEU	UAE University
UCC	Union Cement Company
UNESCO	United Nations for Environmental, Scientific and Cultural Organization
US\$	United States Dollar
USA	United States of America

**For additional information, contact:**

Dubai Aluminium Company Limited  
P O Box 3627, Dubai, United Arab Emirates

Tel: + 971 4 884 6666

Fax: + 971 4 884 6919

[www.dubal.ae](http://www.dubal.ae)