Facing the future in partnership

SUSTAINABILITY REPORT 2010/2012

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dubal
Dubai Aluminium

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About DUBAL

Dubai Aluminium (DUBAL) owns and operates a one million tonne per year aluminium smelter at Jebel Ali, Dubai – the world's largest single-site operations of its kind using pre-bake anode technology.

Message from our President and Chief Executive Officer

I am pleased to present our 2010/2012 Sustainability Report, which covers a wide range of issues important to both DUBAL, as a company, and our stakeholders.

Sustainable development is about 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. At DUBAL, we recognize the value that can be created by being a sustainable business. Consequently, we adopt a holistic approach to our business strategy, seeking to realize value for all our stakeholders through a sustainable business philosophy. Department managers have ultimate accountability for ensuring our contribution to sustainable development and move towards our goal of "zero harm to people and the environment". This is implemented through a number of processes, such as our Environment, Health and Safety (EHS) management standards and our Balanced Scorecard (BSC) system.

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

Some of our sustainability performance highlights from the three-year period under review are detailed in subsequent chapters entitled Economic Sustainability, Environmental Sustainability and Social Sustainability. Our BSC for 2010, 2011 and 2012— which provides the objectives, targets and performance criteria against which we measure ourselves at DUBAL — is summarized on page 12.

Importantly, DUBAL twice received third-party endorsement of our sustainability practices during the review period:

- We won 2nd Runner-up in the Arabia Corporate Social Responsibility Awards 2011 (Large Category), the forum being designed to recognize companies for their policies and actions towards the three dimensions of sustainability; and

- We achieved the Dubai Chamber Corporate Social Responsibility (CSR) Label in 2012, this being a voluntary standard on corporate social responsibility and sustainability that is tailored to the Middle East, specifically Dubai.

Our corporate strategy

Our vision, formulated in 2005, was for DUBAL to become the world's fifth-largest producer of primary aluminium, producing 2.5 million tonnes per year by 2015. This was supported by several core goals, towards which we continually strive — including being the supplier of choice; high quality and low cost producer of primary aluminium; a substantial contributor to the gross domestic product (GDP) of the United Arab Emirates (UAE); being the employer of choice, especially for UAE Nationals; and maintaining our focus on protecting the environment as well as the health and safety of our employees and the community.

With virtual certainty of achieving this milestone in 2014, our vision has been reformulated and as of 2012 our aim is "to be one of the best companies in the global primary aluminium industry 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 sustainability, good corporate governance, and continuing investments in the development of people, provide a solid foundation for this quest. This is combined with our determination to protect the environment and safeguard the well-being of our employees and the community. Our corporate strategy is based on four key areas, as reflected in our BSC:

- Financial success;

- Our customers;

- Operational excellence; and

- Our people.

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

Prudent financial management, together with the inherent flexibility in our operations to change the product mix to meet customer demands, enabled our company to again report strong financial results throughout the three-year period of this report.

Impacts on sustainability

DUBAL's core business is primary aluminium smelting, whereby an electrolytic process reduces ore directly to metal (a fully detailed description of the process and the facilities at our Jebel Ali site can be found on our website, www.dubal.ae). The major impacts of our operations are thus environmental, specifically consumption of raw materials, combustion of fossil fuels and water, gaseous and particular emissions to the atmosphere, effluent discharge and generation of waste (both hazardous and non-hazardous). To minimize the impact of our operations on the environment and, by definition the surrounding community, DUBAL strives to comply with regional and/or international standards – whichever is the more stringent. Moreover, the safety and health of our employees and neighbours take precedence in all decision-making.

Our sustainable development strategy comprises two dimensions — business and sustainability.

Business dimensions

DUBAL's main objectives are to deliver high quality value-added products in a consistent and sustainable manner to our customers; and to generate acceptable returns to our shareholder. The business dimension represents our understanding of traditional contributors to a financially successful and competitive business appreciating that, without a profitable business, we are unable to contribute to the broader goals of sustainability. This dimension includes:

- Business excellence and reliability;
- Customer focus;
- Expansion and growth projects, as well as partnership ventures; and
- Quality, long-life assets.

Sustainability dimensions

Sustainable performance is also dependent upon ensuring access to resources and gaining and maintaining a good corporate citizen image. Maximizing performance is about recognizing the achieved value added through our performance in non-financial dimensions — or sustainability dimensions — such as:

- Aspiring towards zero harm to the people, to the environment, and the local community;
- Ensuring effective governance and risk management processes are in place to ensure a precautionary approach is taken to sustainability issues whilst achieving business outcomes;
- Recognizing the need to be socially responsible and contribute to sustainable community development, including respecting the rights of all our stakeholders and complying with international laws; and
- Ensuring the broader economic contributions of our operations are effectively injected into the local economy.

Good progress was made in all these dimensions in the reporting period, as outlined under 'Our sustainability performance' on pages 8 and 9, and detailed elsewhere in this report.

Key impacts, risks and opportunities

At DUBAL, we strive to implement highly effective standards and processes to demonstrate strong corporate governance. Our approach to corporate governance is based on sound business ethics in conjunction with global best practice. Inherently, our governance structure is designed to optimize economic, environmental and social sustainability within our organization. (The governance structures and processes at DUBAL are detailed under 'Governance' on pages 19 to 22.)

Moreover, an enterprise-wide risk management (ERM) framework is in place at DUBAL. This identifies the risks to our business, and quantifies their impact. It also defines the criteria for recognizing risk and sets the acceptable level of residual 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 the normal course of operations. The risk management framework is consistent with the principles and guidelines set by ISO 31000.

Attention is focused on prioritizing the risks and opportunities pertaining to sustainability in terms of relevance for our long-term organizational strategy, competitive position and the value drivers of our business. The ratings are reviewed on a regular basis, as are changes in performance and other dimensions, attended by processes to address the same. Our ERM framework is complemented by a well-established Emergency Crisis Business Continuity Management (ECBCM) system.

Our sustainability performance

Operationally, the safety of our people comes first and is foremost in every aspect of our business, without compromise. This is reflected in the total recordable injury frequency rate (TRIFR, measured per million man-hours) at our Jebel Ali Site, which at 3.26 in 2012 bettered the target of 3.3 for the year and continued the declining trend of recent years (2010: 4.21; 2011: 3.64). In terms of occupational health, 2012 was the sixth consecutive year in which no lost days due to heat-related illnesses were recorded.

Being an extremely electricity-intensive industry, a continuous supply of energy is critical for business continuity. Issues relating to energy-availability plus the impact of rising energy costs worldwide have placed the sector under pressure, leading to smelter closures in several regions. DUBAL has a captive power station and we place substantial emphasis on conserving energy through efficiency-improving measures. For example, by improving productivity in our potline operations, we have achieved a 5.5 per cent reduction in the energy needed for electrolysis compared to 1990, resulting in an average smelting energy consumption (across all technologies) of 14.73 megawatt hours per tonne (MWh/t) aluminium in 2012 – which is better than the industry norm. Moreover, efforts are focused on improving the thermal efficiency of our power plant, which has led to an overall improvement from 31.2 per cent in 1990 to 44.25 per cent in 2012. This means increased power generation to produce hot metal, while the fuel requirement increment is proportionately less – with direct environmental benefits in terms of fossil fuel combustion and associated environmental emissions.

At the same time, DUBAL supports the efforts of the UAE to optimize energy utilization and diversify energy sources. As a member of the Dubai Supreme Council of Energy (DSCE), DUBAL has implemented the energy demand abatement directives issued to all DSCE member companies in April 2011, and saved over 17,375,316 kWh in the 21 months to December 2012. These directives complement DUBAL's energy-conscious culture and support the Dubai Integrated Energy Strategy 2030 (DIES 2030), which targets efficient energy use to meet the Emirate's environmental and sustainability objectives. DUBAL is also playing an active role in other initiatives to fulfill DIES 2030, including an investment of AED 20 million in the Sheikh Mohammed bin Rashid Solar Park announced by the DSCE in February 2012, where Phase I will yield 10 megawatt (MW) by 2013 and the project is planned to be scaled-up in the future. In addition, DUBAL is participating in a feasibility study relating to the establishment of clean coal-fired power stations in the UAE.

FIGURE 1: PRODUCTION AND SALES STATISTICS, 2003 TO 2012 (TONNES PER YEAR)

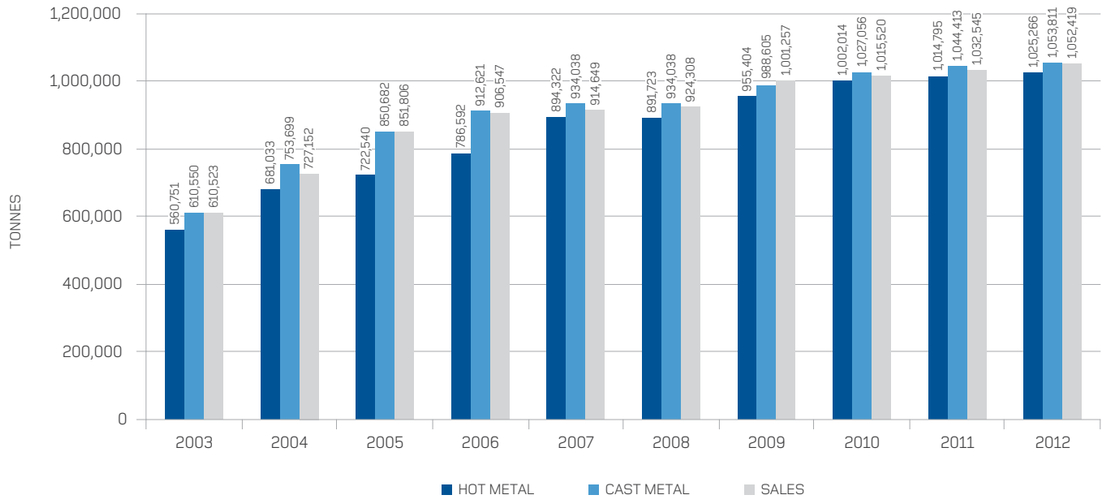
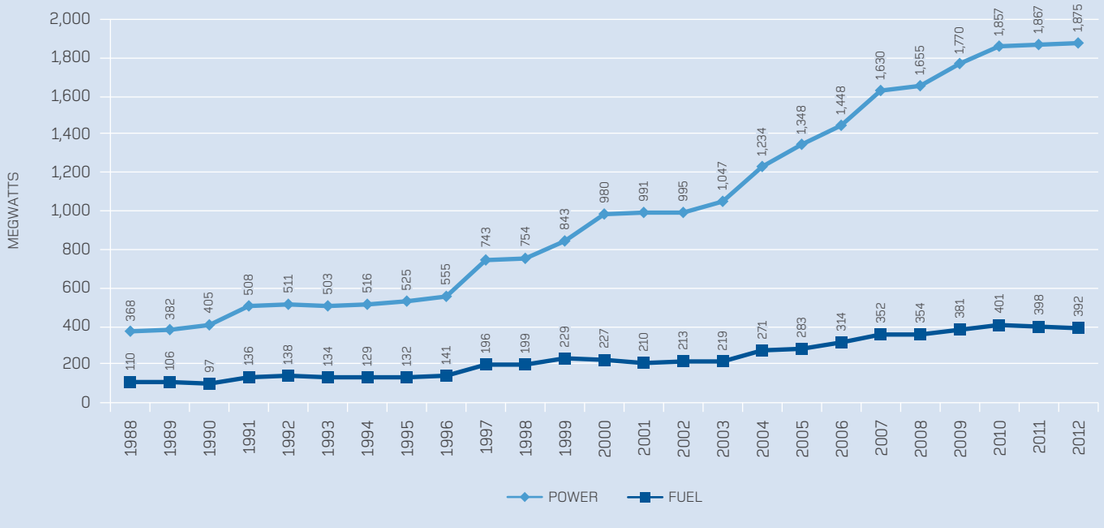


FIGURE 2: POWER PRODUCTION INCREASE VERSUS TOTAL FUEL CONSUMPTION



Environmentally-speaking, our efforts to reduce energy consumption and harmful emissions in 2010 yielded results ahead of the targets for fluoride (F) and perfluorocarbons (PFC) set by the International Aluminium Institute (IAI). The emission volumes of both continued to decline in the reporting period and our fluoride target for 2012 was met, but not quite met for PFCs. Nevertheless, our total fluoride emissions were 53 per cent lower than in 2000; while PFC emissions were 88 per cent lower than in 1990. The volume of oxides of nitrogen (NOx) released to the atmosphere has been maintained from 2008 to 2012 even though hot metal production increased by 15 per cent over the same period; and the total volume of sulphur dioxide (SO_2) emitted per tonne of aluminium produced decreased measurably.

In line with the vision of His Highness Sheikh Hamdan Bin Rashid Al Maktoum (Deputy Ruler of Dubai, UAE Minister of Finance and Chairman of DUBAL), a National Emiratization Policy and strategies have been established in DUBAL to ensure that UAE Nationals are developed to take on challenging roles with increased responsibilities within our organization. Various strategies and tactics are in place to attract talented UAE Nationals with the knowledge and skills to fulfill the required competencies in the organization, as are modes to retain them. Concerted efforts to achieve and sustain targeted nationalization manning levels were rewarded in 2012, with 110 UAE Nationals recruited during the year. This was achieved despite the increasing competition in the UAE for skilled, trained and experienced UAE Nationals across many disciplines.

In 2012, the global aluminium price as set by the London Metal Exchange (LME) dropped considerably (16 per cent lower than 2011), placing DUBAL's 2012 margins under pressure. To remain competitive and minimize the impact of the low LME price on our business, DUBAL re-introduced a Triple C campaign whereby Cash Generation, Cash Conservation and Cost Reduction again became corporate priorities. The campaign achieved its goal of maintaining cash generated by operating activities at sustainable levels despite lower aluminium prices. The LME price remains volatile such that the Triple C campaign remains a core focus at DUBAL.

The decline in the LME aluminium price in 2012 affected smelters around the world. Not only were earnings reduced,

but costs also increased. As a result, more than two-thirds of the world's aluminium smelters are estimated to have operated at a loss. Product and market premiums also play a key role in differentiating profitable smelters from unprofitable ones, and P1020 premiums rose to record levels in several major markets in 2012 – especially Asia, Europe and North America. Strategic efforts to contain our unit costs through the Triple C campaign, coupled with production flexibility, ensured that DUBAL remained profitable.

Analysts predict that the global demand for aluminium will continue to grow, driven by higher activity levels worldwide in sectors such as transportation, construction, housing, infrastructure development and packaging (for food and beverages). The trend is also being boosted by new and more intense uses of aluminium, particularly in the automotive industry where the metal is a key component in the light-weighting of motor vehicles so as to achieve increased fuel economy, reduced carbon emissions and enhanced driving performance. Attesting to this, the weight of aluminium per vehicle has grown from less than 45 kg in 1976 to over 155 kg in 2012. The continued expansion of air travel is also contributing to higher demand for aluminium, which is a key component in the manufacture of commercial airliners and jets. These developments bode well for DUBAL, which is widely acclaimed as one of the world's top producers of both automotive foundry and high-purity ingot; and is among the global leaders in the production of extrusion billet.

DUBAL and Emirates Aluminium Company Limited PJSC (EMAL), in which DUBAL holds a 50 per cent ownership, signed an agreement by which DUBAL is responsible for the marketing and sales of EMAL's entire annual production. EMAL Phase I began producing metal in December 2009 and ramped up to full production by December 2010. Sales of EMAL metal amounted to 289,000 tonnes in 2010, 749,000 tonnes in 2011 and 787,000 tonnes in 2012; in addition to DUBAL's own sales, which exceeded one million tonnes in all three years. DUBAL's equity accounted volume, together with our own production, has exceeded 1.4 million tonnes for the past two years. EMAL Phase II, which is currently under construction, will increase EMAL's total production capacity to 1.3 million tonnes by 2014. This will raise the volume of metal offered to the market to almost 2.4 million tonnes per year, of which DUBAL's share will be almost 1.7 million tonnes.

To cater for this substantially increased volume and to mitigate some of the alumina supply and price risks, we have also invested in strategic upstream bauxite/alumina projects so as to secure a portion of DUBAL's alumina requirements. Due to their complexity, progress on these projects takes time but they are progressing.

The BSC framework continues to be used as a key tool for our company's strategy execution and reporting, to good effect. Through application of the framework, DUBAL is a strategy-focused organization whereby all business units are aligned with our corporate vision and objectives. Progress is evaluated critically at quarterly strategy review meetings, leading to assessment of objectives and adaptation of action plans as necessary – with the ultimate goal of achieving our short- and long-term goals in a sustainable manner.

Looking ahead, DUBAL's performance is expected to reflect continued growth in production and sales. The additional product volumes introduced by the commissioning of EMAL will continue to contribute measurably to this growth, while simultaneously opening new markets. As such, DUBAL is confident of delivering solid results in 2013, and beyond.

Abdulla Jassim Kalban
President & Chief Executive Officer

BALANCED SCORECARD 2010 - 2012

Under target | On target | Above target

FINANCIAL	Achieved better than targeted Jebel Ali net profit for the period 2010 to 2012, mainly due to improved sales quantity and better realized prizes and premiums, partly offset by increased input costs.
CUSTOMERS	Consistently delivered high quality products and services and obtained strong international and local exposure for DUBAL and EMAL brands. DUBAL has also expanded markets and customer-base with increased market share, including marketing and sales of EMAL tonnage.
INTERNAL PROCESSES	Excellent EHS performance during the period: total recordable injury frequency rate, fluoride and PFC emissions were lower than the set targets.
	Hot metal production hit a record high on account of higher amperage, higher current efficiency and lower specific energy consumption against targets. Cast metal production and melt loss were also better than target.
	Implemented various energy-efficiency initiatives and actively co-ordinated with Dubai Government as a member of the Dubai Supreme Council of Energy in developing non-conventional and renewable energy sources.
	DUBAL has successfully delivered DX+ Technology for EMAL Phase II.
LEARNING AND GROWTH	Achieved the targets set for labour productivity and turnover, while the national manning percentage fell below target. Measures are already in place to reach the strategic target set for nationalization percentage.

CASE STUDY

Palladium Balanced Scorecard Hall of Fame

On Wednesday 8 June 2011, DUBAL was officially inducted into the 2011 Palladium Balanced Scorecard Hall of Fame for Executing Strategy.

The Hall of Fame honours those organisations that have achieved an execution premium with break-through results through the use of Kaplan-Norton Balanced Scorecard (BSC), the world's pre-eminent strategy management framework.

DUBAL introduced the BSC concept in 2005-06 and it has since been used as a key tool for our company's strategy execution and reporting, with further developments and on-going refinements as deemed appropriate. Using the BSC framework, DUBAL has not only developed into a strategy-focused organization, but we have also converted our corporate vision of becoming one of the top five players in the global primary aluminium industry by the year 2015 into reality.

Being inducted into the Hall of Fame is a great accomplishment for DUBAL, especially as our company was chosen from amid a strong pool of applicants from Europe, Middle East and Africa. This milestone achievement is also a tribute to the efforts of our employees in executing DUBAL's strategic initiatives efficiently, which in turn has yielded break-through results over the years.

The BSC framework has also contributed to changing DUBAL's culture into an organization focused on more than just financial indicators and operational issues. Through effective communication, our employees understand their respective roles with regard to DUBAL's corporate objectives. Also, everyone is fully involved in applying our corporate strategy to his or her day-to-day job and responsibilities. Not only does each employee now understand strategic decision-making and execution; but they also support our company's drive for continuous performance improvements. As a result, strategy execution at DUBAL has become part of everyone's job.

Corporate profile

Dubai Aluminium (DUBAL) owns and operates a one million tonne per year primary aluminium smelter at Jebel Ali, Dubai — the world's largest single-site operations of its kind, using pre-bake anode technology. In 2010, we produced over one million tonnes of hot molten aluminium for the first time in a single year, and did so again in 2011 and 2012. More than one million tonnes of cast, high quality products have been produced and sold each year since 2009. The DUBAL complex is also home to a 2,350 MW power station (at 30°C), a large carbon plant, casthouse operations, a water desalination plant, and other facilities.

Our head office and primary operations are located in Jebel Ali in the Emirate of Dubai, one of seven Emirates that make up the UAE. We also have four subsidiaries, located respectively in Korea, United States of America, Switzerland and Italy. At the end of 2012, 3,802 people were in DUBAL's full-time employ (including regular and fixed-term employees). This, coupled with 165 temporary employees, brought the total staff complement to 3,967. Forty nationalities are represented across our workforce, with female employees accounting for 6.2 per cent of the total (2011: 5.9 per cent). 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. On-going investments in community initiatives and corporate sponsorships contribute meaningfully to the socio-economic development of Dubai, and the UAE.

We manufacture an array of value-added products in three main forms: foundry alloy for automotive applications; extrusion billet for construction, industrial and transportation purposes and billets for forging applications; and high purity aluminium for the electronics and aerospace industries. More than 88 per cent of our total production volume is exported each year, with DUBAL products being shipped to about 300 customers in 57 countries across five continents – predominantly to Asia (39 per cent), Europe (20 per cent), the Middle East and North Africa (MENA) region (26 per cent), and the Americas (15 per cent).

Sales of DUBAL products over the three-year period under review totaled 3,100,484 tonnes, with the 1,052,419 tonnes sold in 2012 being 1.92 per cent up on the 1,032,545 tonnes sold in 2011 and the highest-ever sales achieved in the company's history. Our sales revenues over the same period amounted to AED 29.580 billion (US$ 8.053 billion), with that in 2012 being AED 9.767 billion (US$ 2.659 billion) – a 12.3 per cent decrease on the AED 11.144 billion (US$ 3.034 billion) achieved in 2011.

In 2010, the ownership of DUBAL changed from being directly owned by the government of Dubai to wholly owned by the Investment Corporation of Dubai (ICD), the investment arm of the government of Dubai. DUBAL thus remains wholly owned by the government of Dubai, albeit indirectly. Having begun to produce metal in 1979, DUBAL's 30th anniversary was celebrated in 2009. A timeline of the major highlights over our 33-year history is available on our website, www.dubal.ae.

DUBAL also owns a 50 per cent share in EMAL at Al Taweelah, Abu Dhabi. Energizing of the 756 reduction cells in EMAL Phase I took place between 1 December 2009 and 31 December 2010 — with full production being reached four months ahead of schedule, and within budget. EMAL Phase II was announced in July 2011. A new 444-cell potline is being built which, together with a technology upgrade of the existing cells, will increase EMAL's annual production capacity to 1.3 million tonnes by the end of 2014.

With a view to securing part of its alumina requirements, DUBAL has made investments in green-field bauxite/alumina projects that are in various stages of development. These projects are in Republic of Guinea; Brazil; and Cameroon. In March 2013, DUBAL acquired a stake in a calciner development project in China.

FIGURE 3: SALES PER YEAR, 2003 TO 2012 (TONNES PER YEAR)

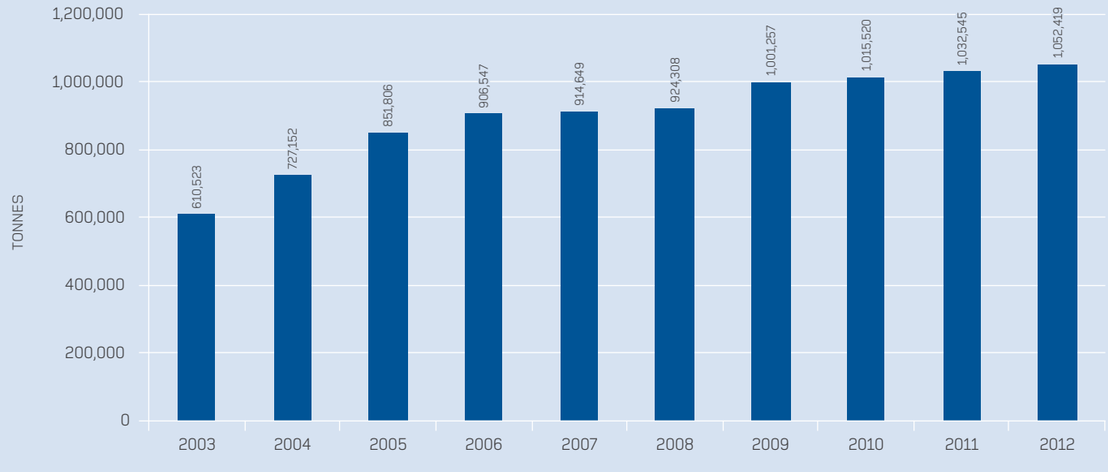


FIGURE 4: REVENUES BY YEAR (US$ MILLION), 2007 TO 2012

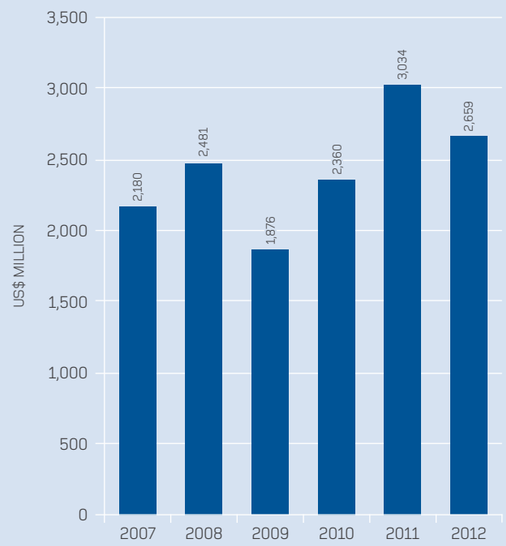
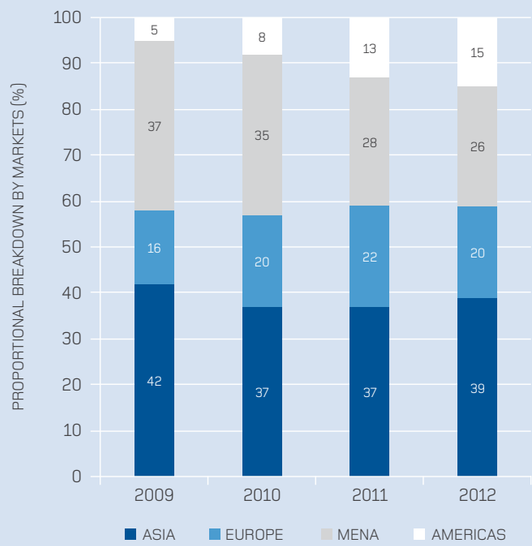


FIGURE 5: SALES BY REGION, 2009 TO 2012



Awards achieved

We are proud to have received several awards in 2010, 2011 and 2012, at both corporate and individual level. In particular, we recognize Abulla Kalban (President & CEO) who, in his capacity as Vice Chairman of EMAL, was the joint recipient of the inaugural 2010 MEED Middle East Aluminium Leadership Award, along with H E Khaldoon Al Mubarak (Chairman: EMAL). The award acknowledges excellence and achievement in the Middle East aluminium industry over the prior twelve months. Abdulla Kalban also won the 2012 Industrial CEO Excellence Award in the Middle East CEO of the Year Awards, which recognize successful government and business sector leaders whose vision, direction, exemplary contributions and initiatives have laid the groundwork for their organizations' successes.

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

Notes for Table 1

a- Ideas.America (formerly known as USA-EIA) is a non-profit service organization dedicated to the worth, contributions and benefits of employee suggestion systems and other employee involvement processes

b- Ideas.Arabia is a forum of companies formed under the umbrella of DQG to optimize and focus the effectiveness of suggestion scheme programmes

c- Ideas.UK is the professional body which provides advice and guidance to help promote the development of staff suggestion scheme programmes

d-The Emirates Energy Award is an initiative under DQG which recognizes the best energy conservation and management practices in the Arabian Gulf

TABLE 1: AWARDS RECEIVED IN 2010, 2011 AND 2012

2010

Dubai Quality Group
Dubai Human Development Award

Ideas.Arabia competition[b]
Technology Award

Ideas.UK[c]
International Award
Campaign Award (first and second)
Benchmarking Survey Award

Ideas.America (formerly known as USA Employee Involvement Association)[a]
Team Idea of the Year Award
Green Idea of the Year Award
Saving per Eligible Employee Ratio (SEER) Award (Gold)

CIO Middle East
CIO 20 Middle East

Emirates Energy Awards[d]
Gold Sponsor's Trophy

Oracle
Oracle Business Performance Management award for Smelter

Computer News Middle East
Editor's Choice - ICT Achievement Awards

Arabian Computer News (ACN) Arab Technology Awards
2010 IT Manager of the Year

UAE Ministry of Education
Appreciation Award as one of the most active private sector organizations in providing meaningful support

2011

Ideas.Arabia competition[b]
Health & Safety Award
Productivity Award

Ideas.America (formerly known as USA Employee Involvement Association)[a]
Overall Idea of the Year Award
Team Idea of the Year Award
Green Idea of the Year Award (Silver)
SEER Performance Excellence (Gold) Award for employee participation
SEER Performance Excellence Honourable Mention Award for savings per 100 eligible employees

Ideas.UK[c]
Environmental Award
Health & Safety Award
International Award
Best Promotional Poster Trophy
Benchmarking Survey Award

CSR Arabia / EEG
Arabia CSR Awards - 2nd Runner-up (large company category)

International Business Awards
Honorary Stevie Award for Business Excellence

Power-Gen International
Project of the Year 2011 "Honourable Mention Best Gas-Fired Project"

Continual Improvement and innovation (CII) Symposium
KAIZEN Category – Silver Award
KAIZEN Category – Bronze Award
Breakthrough Process Improvement Category (using Six Sigma) – Silver Award

Editor's Choice Awards
Security Strategist Editor's Choice Award 2011

CIO Middle East
CIO 50 Middle East

Palladium Group, Inc.
Balanced Scorecard Hall of Fame Award 2011

2012

Middle East CEO of the Year Awards
Industrial CEO Excellence Award

Ideas.Arabia[b]
Health & Safety Award
Productivity Award

CIPS Middle East Awards
Procurement Team of the Year

Deutsches Institute fuer Betriebswirtschaft ("dib")
Best International Idea

Ideas.America[a]
Green Idea of the Year Award (Gold)
Team Idea of the Year Award (Gold)
Team Idea of the Year Award (Bronze)
SEER Award for Performance Excellence (Gold) for employee participation
SEER Award for Performance Excellence (Silver) for savings per 100 eligible employees

Dubai Chamber Centre for Responsible Business
CSR Label

Arabian Computer News (ACN) Arab Technology Awards
Energy and Industry Implementation of the Year Award
CIO of the Year Award

Ideas.UK[c]
Health & Safety Award

Gulf Aluminium Council
1st place: Environment category
2nd place: Health & Safety category

Continual Improvement and innovation (CII) Symposium
KAIZEN Category – Gold Award
KAIZEN Category – Silver Award
KAIZEN Category – Bronze Award
Breakthrough Process Improvement Category – Gold Award

Report profile

This is DUBAL's third Sustainability Report and addresses the period from 1 January 2010 to 31 December 2012. It follows our second Sustainability Report, which covered the period from 1 January 2008 to 31 December 2009. The change from a two-year to a three-year reporting cycle for this report is temporary as our intention is to revert to a two-year cycle for our future Sustainability Reports.

Report scope and boundary

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

As before, the report's contents are organized according to the three globally recognized pillars of sustainability, namely economic, environmental and social sustainability. The tables on pages 93 and 102 provide data for the period 2004 to 2012 and illustrate our longer-term sustainability performance.

We have utilized the Global Reporting Initiative (GRI) Guidelines (Version 3.0) as our primary guidance on content, and the GRI Mining and Metals Sector Supplement 2010 (Version 6.0) where relevant to our operations. In addition, this report has been developed using the principles outlined in the AA1000 Assurance Standard, including materiality, completeness and responsiveness.

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

We determine the level of material relevance and significance for each issue to each stakeholder by utilizing input from these groups, balanced with the expert opinion of our executive management. Although the process is not formalized in a procedure, we are able to make informed decisions about issues of material significance to our business. In addition, we have relied upon the advice provided by Ernst & Young for independent confirmation of our evaluation of the materiality of issues.

Amendments to previous sustainability reports

In accordance with the GRI Guidelines, any amendments or corrections to data declared in previous sustainability reports need to be identified in subsequent reports. In this regard, data in the following areas in our 2008/2009 Sustainability Report has been revised for accuracy:

- Raw materials – The data has been restated to reflect inventory adjustments.
- Energy consumption – The unit of measure has changed to kilowatt hours per kilogram aluminium produced, for greater intra-operation and industry sector comparability.
- Greenhouse gas emissions – The data has been corrected in line with the environment database.
- Other gaseous emissions – The data has been corrected in line with the environment database.
- Solid waste to landfill – The data has been corrected in line with the environment database, which uses different data categories; and has been calculated as a rate in terms of hot metal production (not cast metal production, as before).
- Land use – Revised to 475 hectare, based on latest survey by our Engineering department.
- Community investment – Unit of measure incorrectly shown as million AED in previous report, now amended to thousand AED.

The revised figures are reported in the tables on pages 93 to 102.

Independent assurance statement to Dubai Aluminum (DUBAL) management

Ernst & Young (Dubai) was retained by DUBAL ("the Company") to provide independent assurance on its Corporate Sustainability information, forming part of its Sustainability Report ("the Report") for the calendar years 2010 - 2012. The Report has been prepared by the management of DUBAL, who are responsible for the collection and presentation of information reported. Our responsibility, in accordance with management's instructions, is to provide a limited assurance engagement on the completeness and accuracy of selected sustainability information presented in the Report. Our responsibility in performing our assurance activities is to the management of the Company only. We do not accept or assume any responsibility for any other purpose or to any other person or organization. Any reliance any such third party may place on the Report is entirely at its own risk. This assurance statement should not be taken as a basis for interpreting the Company's overall performance, except for the aspects outlined in the scope below.

Scope of Assurance

The scope of our assurance covers indicators and sites considered relevant to the Company and include:

- Selected performance claims made within the Report and
- Environmental, Health and Safety, employee, community, production and materials data contained within the Key Indicators table in the Report.

Our Approach

This assurance engagement was planned and performed in accordance with International Federation of Accountants' International Standard for Assurance Engagements other than Audits or Reviews of Historical Financial Information (ISAE 3000). Our key steps were as follows:

- Interviews with key selected personnel to understand processes and controls in place for related sustainability activities;
- Engagement with key teams such as Environment, Health and Safety, Production, Procurement, Human Resources and Finance to understand current status of sustainability activities and progress against stated targets;
- Review of selected sustainability performance claims including evidence and documentary reviews to support selected claims made in the Report; and
- Selected sustainability data assessment, review and walkthroughs of underlying processes and controls governing the collection, collation and conversion of sustainability data contained in the Report.

Operational Visits

Ernst & Young visited the Company's offices, operations and facilities in Dubai (UAE) to review selected sustainability information outlined in Scope of Assurance above. We also reviewed systems and processes for managing and reporting sustainability data, relating to selected information in the Report. Evidence in support of selected claims made in the Report regarding the Company's sustainability performance was reviewed and clarifications sought where necessary.

Level of Assurance and Criteria used

Our evidence gathering process has been designed to obtain a limited level of assurance (as set out in ISAE 3000) on which to base our conclusions. We also utilized the criteria of the reporting principles and indicators of the GRI 2011 guidelines (GRI G3.1).

Our Assurance Team

Our assurance team, comprising of multidisciplinary professionals, has been drawn from our Middle East Clean Energy and Sustainability team, who have undertaken similar engagements with a number of regional and global businesses.

Limitations of Assurance

The assurance scope excludes:

- Aspects of the Report and data/information other than those mentioned under Scope of Assurance;
- The Company's statements that describe expression of opinion, belief, aspiration, expectation and future intention; and
- Review of economic performance data and information, included in the Report, which we understand is derived from the Company's audited financial records.

Observations

Our observations of the Report are as follows:

- DUBAL continues to develop its sustainability policies and programmes with a focus on worker safety, quality management and occupational hazards.
- Social programmes initiated by DUBAL continue to grow and employee engagement has become an important principle underpinning its activities.
- As the international consensus on integrated reporting has grown and become more standardized, DUBAL may wish to focus on adapting key practices such as highlighting the socio economic impacts of its sustainability activities and performance in future reports.

Our Conclusion

On the basis of our review and in accordance with the terms of reference for our work, nothing has come to our attention that would cause us not to believe that:

- The Report presents the Company's material performance covering key areas mentioned in the Scope of Assurance;
- The Report content presents a fair and balanced overview of the Company's sustainability performance.

Ernst & Young

23 May 2013

Governance

The governance structure at DUBAL consists of the Board of Directors, the President & Chief Executive Officer (CEO), and the Executive Management Committee (see Figure 6). Four key committees support the Board, namely the Finance Committee, Technical Committee, Audit Committee and Human Resources (HR) Committee, the details of which appear on page 22.

To support the implementation of business plans and ensure that Board directives are achieved by the President & CEO, several committees operate within the office of the President & CEO. These include committees on: Investment; Risk Management; Technology; Strategic Materials; Intellectual Property (IP); Project Tenders; Purchasing Tenders; Mechanical Engineering; Smelter Projects Steering; Information Technology (IT) Governance; Electrical Engineering; and Environment, Health & Safety.

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

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

DUBAL has an independent Unitary Board of Directors, comprising a Chairman, Vice Chairman and five members. Our Board of Directors is distinct from the Executive Management Committee and shares no members. In addition, neither the Chairman nor the members of the Board are executives of DUBAL. Board members are appointed from various industries to leverage diverse experience and expertise. The Board meets at least six times per year.

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

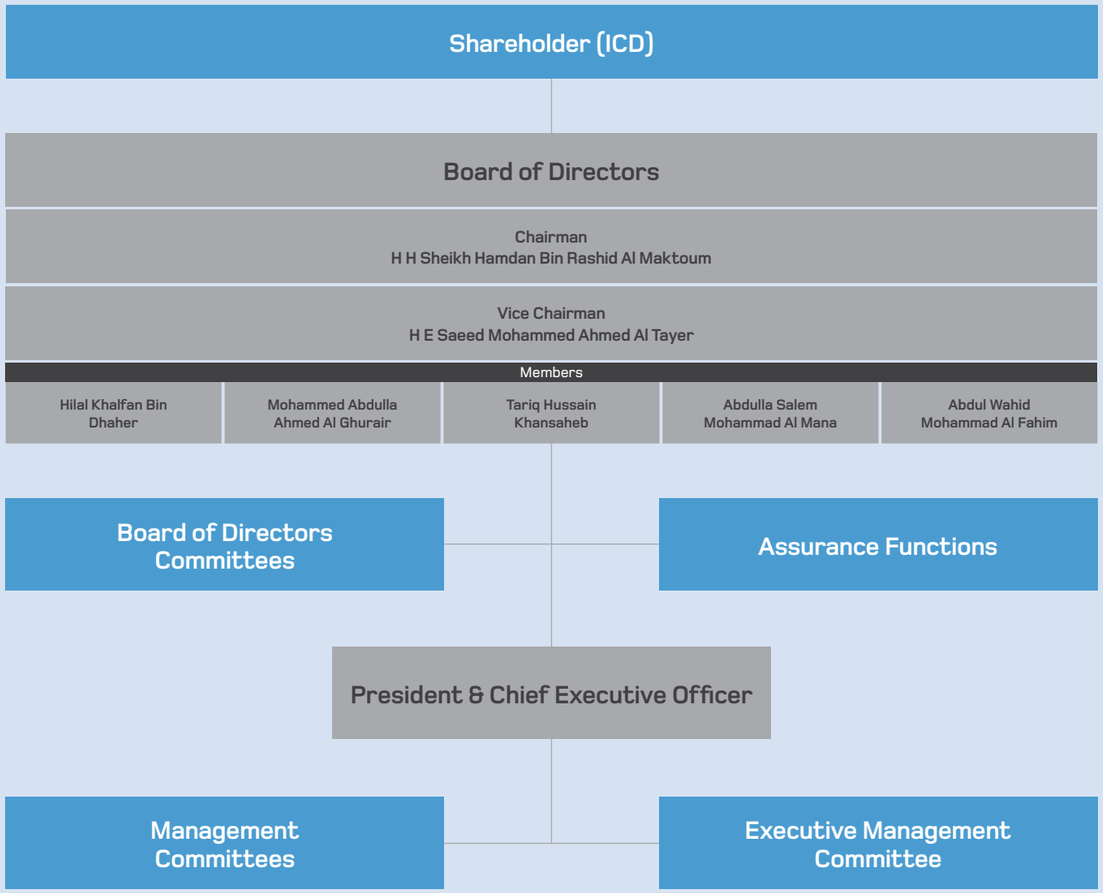
DUBAL is committed to promoting and supporting a culture of open communication between all levels of employees. We use a number of channels to facilitate this dialogue, including the "Voice Your Opinion" employee satisfaction survey every three years, direct emails to the President and CEO, a Grievance System and an Issue Logging Form. There is a clear, documented procedure for each of these mechanisms, which includes timelines for responding to employees and clearly identified escalation processes. A whistle-blower mechanism – Your Voice – was developed and implemented in 2012, using the services of an independent third party (detailed on page 21).

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

Continuous improvement is built into our corporate culture. To this end, we have re-engineered our team-based performance programmes to facilitate on-going significant improvements in the performance of each of our teams. For example, our Business Excellence (BE) programme, which is the foundation of DUBAL's Total Quality Management (TQM) model has been enhanced by adding scientific problem-solving tools and methodologies, such as additional quality control tools and the Lean Six Sigma (LSS) approach.

The day-to-day operations of our company are governed and controlled by formalized 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. To augment this, an ERM framework has been put in place, which identifies risks and quantifies their impact; defines the criteria for recognizing risk; and also sets the acceptable level of residual risk of the company (see page 22).

FIGURE 6: GOVERNANCE ORGANOGRAM OF DUBAL



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

- ISO 9001:2008 Smelting & Casting of Primary Aluminium
- ISO/TS 16949:2009 Casting of Primary Aluminium & Alloys
- ISO 9001:2008 Desalination, Power and Engineering Operations
- ISO 14001:2004 Smelting & Casting of Primary Aluminium
- OSHAS 18001:2007 Smelting & Casting of Primary Aluminium
- ISO IEC 27001:2005 Information Security Management System
- ISO IEC 20000-1:2005 IT Services Management

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

During 2012, we contracted the services of an independent third party for a formalized whistle-blower programme. Called "Your Voice", the programme provides a mechanism for employees and other stakeholders to report serious breaches of DUBAL's policies and Code of Conduct anonymously, either by telephone or via a dedicated page on the third party's website. Confidentiality is guaranteed, although those reporting breaches do have the option of including their personal and contact details should they be willing to participate in the investigations consequent to their reports.

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

As of the 2013 performance management cycle, which begins with the signature of performance agreements by all employees at the beginning of each calendar year, every employee will be required to indicate their agreement to the Conflict of Interest clause in our Code of Conduct. This new development not only aims to remind employees of the clause on an annual basis, but also allows for any changes in an employee's position within the company or his/her personal investments during the course of the prior year. The current members of DUBAL's Board of Directors were not required to declare any conflict of interest. This will be redressed at the next new appointments to the Board of Directors, where incumbents will be asked to declare any conflicts of interest.

TABLE 2: LIST OF DUBAL POLICY STATEMENTS, AS AT END-2012

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

Finance Committee

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

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

Technical Committee

The Technical Committee overviews our technical issues, the utilization and maintenance of our equipment, with responsibilities including reviewing major engineering projects, development and proposed changes in operating technology, and tenders for the acquisition of equipment, materials and services. The Technical Committee also reviews the capital and operating budget and meets at least four times a year.

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

Audit Committee

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

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

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

Human Resources Committee

The Human Resources (HR) Committee assists the Board of Directors by ensuring that DUBAL has appropriate HR strategies, policies, succession planning and practices in place to ensure the company's continued business success. This includes reviewing the succession plans for DUBAL's executive team, high performance team, identified key personnel and senior managers; reviewing DUBAL's competitiveness in terms of compensation and working conditions for all employees; and recommending appropriate action to the Board of Directors to ensure that DUBAL maintains the correct HR management policies and systems. Full responsibility for DUBAL's remuneration policy is, however, retained by the Board of Directors.

The HR Committee meets at least twice a year and the members are Hilal Khalfan Bin Daher (Chairman), Abdul Salim Mohammad Al Mana, Abdulla Kalban, Sultan Al Sabri and Willem Pretorius.

Corporate governance

An independent review of corporate governance at DUBAL was conducted by Hawkamah Institute for Corporate Governance (Hawkamah) in April 2011. The results of the review, which were presented to the Board of Directors in June 2011, indicate that DUBAL is a mature company, with world-class policies and procedures; demonstrates a clear commitment to good corporate governance; has clearly assigned roles and responsibilities; and has developed a detailed authority matrix. Hawkamah also made recommendations for continuous improvement, in response to which the Board of Directors resolved that DUBAL's management should investigate implementing the same.

Our governance structure has since been strengthened through the appointment of a highly qualified Company Secretary & Chief Legal Counsel in July 2011. Also, as mentioned on page 19, a detailed ERM policy and procedures were produced in 2011, with the view to strengthening the effectiveness of risk management at DUBAL — thereby protecting and enhancing shareholder value. Fully aligned with our risk management framework, the ERM policy and procedures document aims to highlight the top ten enterprise-wide risks, the potential impact and probability of occurrence, as well as those accountable to manage the risks and the actions to mitigate the same.

An IP Committee was formed in August 2011 to formulate and examine strategies, policies and procedures to identify and protect intellectual property that DUBAL either owns or has the right to use or own; examine proposals for suitability of IP registration or protection via a non-registration route (such as trade secrets or copyright); ensure that appropriate registrations are executed; and monitor DUBAL's IP sales, licenses, registrations, protections and allow DUBAL to refrain from infringing.

Emergency Crisis & Business Continuity Management

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 ECBCM system has been implemented, which includes a dedicated Crisis & Business Continuity Management (CBCM) department in DUBAL; and comprehensive Business Continuity Plans (BCPs) along with ECBCM policies and procedures.

Commitments to external initiatives

At DUBAL, we place the highest priority on ensuring the occupational health and safety of our employees and contractors; and protecting the environment. The impact of our operations on these measures is taken into consideration in all decision-making, with the overriding aim being not to implement activities or projects where the consequences are uncertain or potentially dangerous. Moreover, as outlined under 'Governance' on page 19, various internal processes are in place, all of which are essentially underpinned by the precautionary principle – especially in terms of risk identification and management.

DUBAL is an active member of several regional and international bodies such as the Dubai Quality Group (DQG), LME, Gulf Aluminium Council (GAC) and Emirates Environment Group (EEG) with whom we work collaboratively towards sharing knowledge and the exchange of ideas. DUBAL is also a member of the IAI EHS committees, and subscribes to the IAI's Sustainable Development Initiative (SDI). As listed on page 21, DUBAL is certified to several international standards supporting effective business management, quality and environmental, health and safety performance.

Our President and CEO, Abdulla Kalban, is the Chairman of GAC and a Director of the IAI; and also serves actively on various committees such as The Minerals, Metals & Materials Society (TMS), the Dubai Executive Council Committee for Infrastructure & Environment, and the DSCE. Members of executive and senior management also serve on various committees of GAC and DSCE – both organizations being of strategic importance to our company and the aluminium sector, regionally and globally. Additional to paying DSCE dues, DUBAL has invested AED 20 million in the development of the Sheikh Mohammed bin Rashid Solar Park (phase I is currently under construction); and is participating in a study on the feasibility of clean coal-fired power stations in the UAE.

CASE STUDY

Taking care of our future business today

An emergency or crisis situation – defined as a stage in a sequence of events at which the trend of all future events (for better or worse) is determined – can arise at any point in time. If improperly handled such a situation could lead to a disaster; in a business setting, this could threaten the continued operation of the business itself. Preventing and/or averting this require effective control of any crisis, emergency situation or business interruption.

With this in mind, DUBAL has established a dedicated Crisis & Business Continuity Management (CBCM) department; and has also formulated comprehensive Business Continuity Plans (BCPs) as well as Crisis, Emergency & Business Continuity Management policies and procedures.

The Business Continuity Management department is responsible for developing the overall Crisis & Business Continuity Programme for DUBAL and ensuring effective management of the Crisis & Business Continuity lifecycle. The President & CEO promulgates the policy and directs specific contingency planning. He is the owner of DUBAL Crisis/Emergency and Business Continuity Management System.

Every Area Business Owner, i.e. all Vice Presidents and General Managers, is responsible for the development and maintenance of their respective BCP.

Stakeholder engagement

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

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

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

Government of Dubai and shareholder

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

- Our sole owner — The ICD, owned by the government of Dubai, is the sole shareholder of DUBAL and our independent Unitary Board of Directors is appointed by His Highness Sheikh Mohammed Bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai.
- The Board of Directors — This body interfaces with the government of Dubai through the Chairman of the Board, His Highness Sheikh Hamdan Bin Rashid Al Maktoum (Deputy Ruler of Dubai and UAE Minister of Finance). Our foremost responsibility to our shareholder is to deliver on-going value and financial return to the government of Dubai. We also act as a good ambassador for the Emirate of Dubai in the international markets where we operate.
- Supplier of natural gas — The Dubai Supply Authority (DUSUP) is currently the only supplier of natural gas in the Emirate of Dubai. Its two largest customers are Dubai Electricity and Water Authority (DEWA) and DUBAL.
- Operator of Jebel Ali Port — We import the majority of our raw materials and export our finished aluminium products through Jebel Ali Port, which is operated by DP World. DP World is 80 per cent indirectly owned by the government of Dubai through Dubai World, a holding company for a portfolio of businesses and projects for the Dubai government.

CASE STUDY

5S – Working together, for good

Eager to enjoy the benefits of Lean Management in terms of eliminating waste from the workplace, DUBAL has begun implementing the 5S programme exhaustively across the organization as a part of our drive towards continual improvement. Employees at all levels are encouraged and recognized for their efforts in enhancing the effectiveness of workplace management practices in their respective areas. Internal mechanisms and controls are in place to implement and sustain effective and efficient workplaces across the organization.

A 3S & 5S Certification Ceremony is organized twice a year to celebrate the success of 3S/5S efforts and sustenance of certification by individual areas. Certificates are awarded to new areas that have successfully completed 3S/5S requirements; while previously certified areas are recognized for their continuous efforts towards sustaining 3S/5S practices. DUBAL's fourth 3S & 5S Certification Ceremony took place in August 2012.

2011 was characterized by more focused efforts towards 5S implementation, driven by the involvement of all employees. The 5S Core Team conducted 206 Audits during 2011 and 273 audits in 2012, with the aim of implementing, sustaining and improving effective and efficient workplace management practices across the organization – including operations, maintenance and all support functions. These surprise audits are also conducted to gauge the 5S culture, rather than merely housekeeping.

The success of the programme and effective workplace management is established on the strong foundation of 5S Certification, which is carried out by DUBAL's 5S Executive Team as per stringent certification criteria. The 5S Executive Team conducted three certification assessments during 2011 and two in 2012.

- Regulator — The government of Dubai acts as regulator for DUBAL's business and operations. For example, regular updates on labour legislation are sent to DUBAL. Naturally, our company is subject to environmental regulations passed by the Dubai Municipality, as well as at UAE federal level by the Ministry of Environment & Water, that affect nearly every aspect of DUBAL's operations. We obtain environmental permits from Dubai Municipality on an annual basis; and operate well within the permitted limits.

Customers

Since inception, DUBAL's overriding aim has been to maintain long-term, sustainable relationships with our customers through continuing quality of our product and customer care programmes. This approach has been rewarded by most of our customers remaining loyal to DUBAL over a long period of time, many since our company's inception.

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

The process starts with developing agreements with customers regarding a product's technical specifications, to match their individual requirements. We provide all product specifications to customers at the time of order placement and provide quality assurance on each delivery. Each customer receives a certificate detailing the chemical composition of the product, the absence of radioactive materials and confirming that the product is free of impurities. Numerous value-adding services are also provided, notably:

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

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

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

Employees

Our people are our greatest asset and we therefore aim to give them a clean, safe and healthy working environment within which they can fulfill their career aspirations. Accordingly, as outlined under 'Social sustainability' on pages 65 to 84, we offer competitive, market-related remuneration packages and place a great deal of emphasis on career development, skills transfer and training. We also continually improve our HR policies to align these with international labour practices. These efforts ensure that DUBAL is an employer of choice in the industry, as evidenced by our high staff retention rate and our ability to attract skilled staff from all over the world.

Two-way communication is encouraged and various platforms are provided for bottom-up dialogue. For example, our third biennial Voice Your Opinion employee satisfaction survey was conducted in 2011 and 84 per cent of employees participated. The survey, conducted by Hay Group (an international management consultancy) and analysed using industry benchmarks, showed that DUBAL ranks 7 per cent above the Global Industry Norm, 4 per cent above the Middle East Norm and on par with the High Performing Companies Norm (see page 69). The concerns raised by employees formed the basis for developing and implementing corporate and business unit-level action plans to remedy or address specific aspects.

Suppliers

DUBAL acknowledges that an effective, responsive and sustainable supply chain is essential to the continued success of our business. We engage a wide range of suppliers, both strategic and non-strategic, and a substantial proportion of our annual operating budget is dedicated to paying our contractors and suppliers for the raw materials, parts, equipment and services they provide. To ensure effective expenditure, we strive for successful contract management, excellent purchasing strategies and stringent inventory control. This is complemented by open and transparent communications with all our suppliers to ensure full understanding of our business requirements and organization needs; and regular compliance audits.

Our most recent biennial Supplier Satisfaction Survey covered 2009 and 2010. This survey attracted a 90.6 per cent response rate and the overall satisfaction level achieved was 4.46 (very good to excellent). The ratings for communications, payment process and enquiry process ranked highest, followed by purchase order process. The next such survey will be conducted in 2013 and will cover both 2011 and 2012. Every year, we undertake up to twelve audits on active, non-strategic General Materials/Services suppliers to ensure complete compliance with our sourcing policy. We completed 33 such audits in 2010, 18 in 2011 and 26 in 2012. The audit criteria are based on the criticality of the product and the quality of the material supplied.

Community

We are aware that DUBAL's actions influence different parts of the community in different ways. We are also aware that our relationship with the community needs to be long-term, sustainable and mutually beneficial if our company is to successfully cohabit with the community and continue to make a positive contribution to the lives of the people with whom we interact.

DUBAL therefore endeavours to be a good corporate citizen and a role model for care and responsibility by actively supporting initiatives and projects that promote the socio-economic growth of Dubai, thus benefiting the cosmopolitan population of the Emirate. Preference is given to activities that endorse the broader goals of the Dubai government and to causes that will benefit most through our involvement. Our support comprises financial and in-kind assistance as well as contributing our time, expertise and patronage to events in the community in four main areas of activity (see 'Social sustainability' on page 85).

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

02

Economic Sustainability

At DUBAL, we support a holistic view of economic sustainability and agree that it is not just about the financial performance of our organization. Instead, economic sustainability should reflect the degree to which the wealth generated and resulting financial resources are used to contribute to society. This includes, among others, investment in employees, job creation, support of the supply chain, investment in the future, investment in the community, training and education programmes, and support of national economic growth.

An economic impact study conducted by Ernst & Young at our request, revealed that DUBAL in 2010 generated over US$ 1.66 billion (AED 6.1 billion) in direct and indirect value for Dubai, which equated to 2.5 per cent of Dubai's GDP. In the manufacturing sector specifically, DUBAL's direct and indirect contributions in 2010 accounted for 14.3 per cent of Dubai's GDP. The study also showed that DUBAL directly or indirectly supported almost 15,000 jobs in Dubai in 2010, representing almost 1 per cent of Dubai's total employment; and that the US$ 190 million (AED 700 million) invested by DUBAL in fixed capital during 2010 accounted for 2.2 per cent of Dubai's total fixed capital formation that year. Moreover, DUBAL's 2010 exports (88 per cent of our total sales volume) represented more than 12 per cent of Dubai's total export of goods.

Economic performance

2011 was an excellent year for DUBAL: we achieved record gross sales revenue of AED 11.144 billion (compared to AED 8.670 billion in 2010), with record net profits of AED 3.515 billion equating to approximately 31.5 per cent of gross sales revenue (2010: AED 2.129 billion), thereby remaining one of the most profitable corporations in the Emirate of Dubai's portfolio. This record profit performance reflected a combination of higher production and sales volumes, plus the benefit compared to 2010 of higher LME prices, coupled with sustained focus on controlling the cash conversion cost, despite increasing pressure on the purchase prices of raw materials. Reducing budgeted capital expenditures and maintaining tight working capital control also contributed significantly to achieving improved cash generation from operating activities and free cash flow.

However, in 2012, the global aluminium price as set by the LME dropped considerably (around 16 per cent lower than 2011), placing DUBAL's 2012 margins under pressure. As mentioned on page 9, DUBAL re-introduced a Triple C campaign mid-2012, whereby the combination of Cash Generation, Cash Conservation and Cost Reduction efforts again helped maximize our profitability by reducing the unit cost of production to the targeted level. The LME price remained volatile, the net impact being curtailment of DUBAL's annual cash generated by operating activities by 20 per cent compared to 2011.

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

In terms of revenue generation, our strategy is to sell the majority of our cast metal production to end-user customers. As illustrated in Figure 5, Far East/Asia remained our biggest market over the reporting period (see page 14). Tonnages sold remained essentially stable at 39 per cent in 2012. The MENA region remained our second largest market and accounted for 26 per cent of 2012 tonnages. Sales to the European market decreased marginally by 6.22 per cent in 2012, while that in the Americas grew from 8 per cent in 2010 to 15 per cent in 2012. The latter is attributable both to higher sales into the USA, and measurable success achieved in penetrating the South American market. In 2011 and 2012, approximately 33,000 tonnes of DUBAL products were shipped to South America.

With regard to the financial implications, risk and opportunities arising from climate change, the carbon taxes levied in some countries could impact the price of raw material imports (such as alumina) and might necessitate that DUBAL sources alternative suppliers. The possible closure of aluminium smelters elsewhere in the world may benefit DUBAL by reducing the present inventory in aluminium warehouses.

A pension benefit plan is provided for eligible employees, in accordance with UAE National Pension and Social Security Law. Our company contributes to the pension plan and accounts are held for the duration of an employee's service at DUBAL. Coverage of DUBAL's obligations in this regard has not been compromised in the review period.

Although DUBAL is to all intents and purposes a wholly state-owned entity, no significant financial assistance is received from the government of Dubai. To the contrary, our shareholder expects DUBAL to operate as an inherently sustainable and thus profitable business.

Since 2009, the focus of the capital expenditure programme at our Jebel Ali site has shifted from growth to assets renewal. This reflects a corporate decision to grow through our EMAL joint venture and to consolidate the growth achieved in prior years at Jebel Ali by concentrating on improving our operations so as to gain better production returns on our expanded infrastructure. Over the reporting period (2010 to 2012), we implemented a US$ 503 million capital expenditure programme, of which approximately US$ 117 million was invested in expansion projects.

It is noteworthy that DUBAL, which has been in operation for 33 years, continually invests in new and advancing technologies. Within the reporting period, for example, several upgrade projects were completed in our Casting Operations so as to increase our production flexibility and be more responsive to customers' changing needs. These included upgrading our 8kg and 20kg ingot casting lines, installing additional batch homogenizers and implementing 100 per cent ultrasonic inspection systems.

Going forward, we expect DUBAL's molten metal and cast aluminium production to equal or exceed the levels reached in 2012 and for our operational cost structure to remain relatively stable. Our strong financial position, coupled with various proactive steps undertaken by management, has positioned DUBAL well to meet all our investment requirements, both for our Jebel Ali operations and EMAL Phase II. With respect to LME aluminium price movements, we believe that the most effective long-term price risk management policy is to remain a low-cost producer and supplementary we will continue to evaluate our hedging strategy to mitigate downside risk as market conditions evolve.

DUBAL's economic sustainability will continue to be based on strong cash generation from operations. Our capital and investment expenditures for the completion of EMAL Phase II and, to a lesser degree, in respect of our Jebel Ali smelter complex, will be met by this, supplement by long-term financing.

Donations and community investment

Our community investment over the three-year period totaled US$ 17.549 million. Table 3 depicts the breakdown of the expenditure, in broad categories.

TABLE 3: COMMUNITY INVESTMENT AT DUBAL 2010 TO 2012

Community investment		2010	2011	2012
Education	AED '000	667	767	842
Sports/events	AED '000	18,659	18,243	18,900
Environment	AED '000	217	1,230	1,386
Donations	AED '000	619	2,254	671
TOTALS	AED '000	20,162	22,494	21,799

Core investments

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

The EMAL project is designed to be the largest aluminium smelter in the world. It is being built in two phases. EMAL Phase I, with a total capacity of 750,000 tonnes per year, began operating on 1 December 2009 and reached full capacity on
31 December 2010. EMAL Phase II was announced in July 2011. The project entails a new 444-cell potline (currently in advanced stage of construction) and a technology upgrade of the existing cells, which will increase EMAL's annual production capacity to 1.3 million tonnes by the end of 2014. DUBAL's DX Technology has been licensed to and installed at EMAL Phase I; while DUBAL's DX+ Technology has been licensed to EMAL Phase II. DX+ Technology has also been selected by Aluminium Bahrain BSC (Alba) for its Line 6 Bankable Feasibility Study.

Pursuant to our 2006 joint protocol, DUBAL is jointly reviewing with Mubadala potential greenfield aluminium smelter projects in the MENA region. Currently, we do not have any material commitment in respect of these potential projects.

Upstream investments

Investments are also being made to secure a portion of DUBAL's requirements of alumina. Currently, DUBAL is engaged in strategic upstream bauxite/alumina projects that are in various stages of development. The most active of these projects are detailed below. As of 31 December 2012, our total investments in bauxite mine and alumina refinery projects amounted to US$ 266 million.

Brazil – Companhia de Alumina do Pará (CAP)

This is a joint venture greenfield project with Norsk Hydro of Norway to build an alumina refinery in Brazil. The CAP refinery will have an initial capacity of 1.86 million tonnes per year, expandable to 7.4 million tonnes per year. DUBAL holds 19 per cent equity in the joint venture and additionally has secured a commercial alumina off-take for four years from Norsk Hydro.

Republic of Guinea – Guinea Alumina Corporation (GAC)

This project entails the development of a 3.3 million tonnes 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. The shareholders are currently working on restructuring the ownership of the project.

Cameroon – Cameroon Alumina Limited (CAL)

DUBAL (45 per cent), Hindalco of India (45 per cent) and Hydromine of USA (10 per cent) have formed this joint venture company to develop a mine (about 500 to 600 million tonnes of bauxite ore) and build an alumina refinery.

FIGURE 7: BREAKDOWN OF NON-STRATEGIC SUPPLIERS TO DUBAL BY REGION, 2009 TO 2012

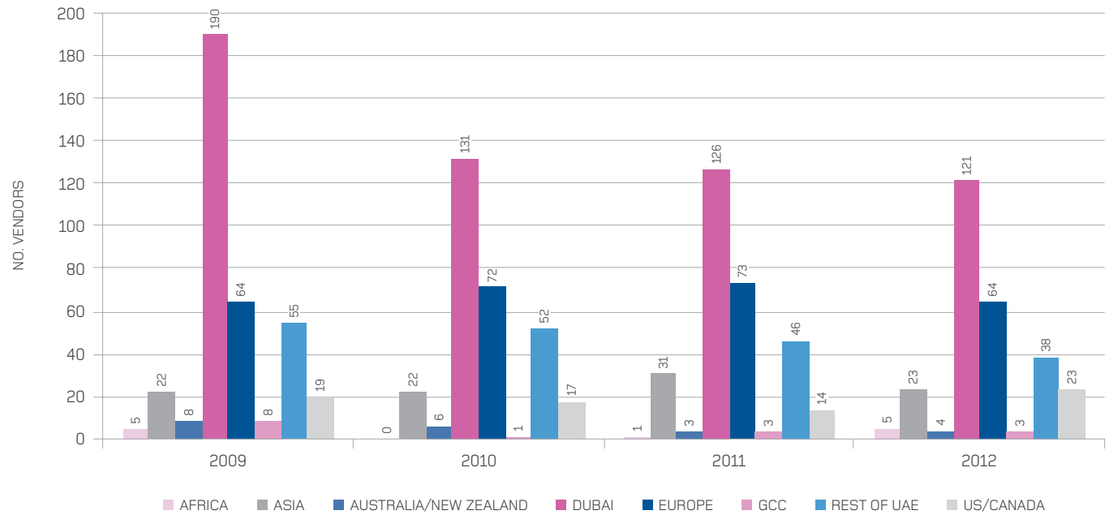


FIGURE 8: NUMBER OF EMIRATIS HIRED PER YEAR (ACCUMULATIVE TOTALS)

Market presence

Each pay grade at DUBAL has a salary scale with a minimum and maximum level, which is applied without discrimination by gender. Every two years, we conduct a survey on staff compensation and benefits. An international management consultancy benchmarks us against the salary standards of large organizations within the UAE and the Gulf. Based on the findings, we endeavour to provide competitive remuneration packages to our staff. The most recent salary survey, conducted by the Hay Group in 2011, showed that DUBAL's salary packages are competitive and, in some instances, better than certain companies locally and regionally. As a result, the salaries and benefits at DUBAL remained unchanged.

DUBAL is firmly committed to the Emiratization of our business and has an active National Emiratization Policy, targeted at employing UAE Nationals. Our Recruitment department participates actively in almost all career expositions at universities and colleges across the UAE, as well as in the annual Careers UAE exhibition. Local knowledge and talent is then fostered by investments in training, succession planning and professional development of UAE Nationals, thereby developing these employees for challenging roles with increasing responsibility in our organization.

More than 320 UAE Nationals were employed for high skills positions across the organization during the three-year reporting period (see Figure 8), bringing the total accumulative number of new Emirati recruits hired by the company since 2008 to 496. At the end of 2012, Emiratis comprised 16.36 per cent of our workforce, with the proportion at senior management level being above 68 per cent.

Indirect economic impacts

At DUBAL's inception in 1979, our corporate slogan was "Metal for the World, Water for Dubai". This reflected the innovative decision to include a Desalination Plant within our smelter complex, whereby the heat generated hot combustion gases from the gas turbines in our Power Plant are used to produce steam, which in turn provides the energy to produce sweet water (potable and distilled) via thermal desalination of seawater.

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

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

Also in support of Dubai, we run one or more blood donation campaigns every year on-site in partnership with the Dubai Blood Bank. During the three-year reporting period, we repeatedly received an overwhelming response from our employees.

DUBAL contributes 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. 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. The nature and extent of our indirect economic contributions were evaluated by Ernst & Young in 2011, using 2010 statistics (see page 29). This study revealed, for example, that our indirect contribution in 2010 accounted for almost one-quarter of our total contribution to Dubai's GDP; and that two-thirds of the employment generated by DUBAL was indirect (through our local suppliers).

03

Environmental Sustainability

DUBAL recognizes that there is an inherently large environmental footprint associated with the production of primary aluminium since it is an energy-intensive process that also yields certain air emissions, solid waste and liquid waste. We therefore endeavour to minimize the environmental impact of our operations wherever possible. Our main goal is to make the production process as efficient as we can so as to minimize the use of resources and control the release of pollutants into the environment.

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

- Raw materials;
- Energy;
- Water;
- Biodiversity:
- Emissions, effluents and waste; and
- Transport (incorporated under the sections on energy and greenhouse gas emissions).

Each of these parameters is discussed below, along with an assessment of our initiatives to minimize DUBAL's environmental footprint and to improve our performance.

Raw materials

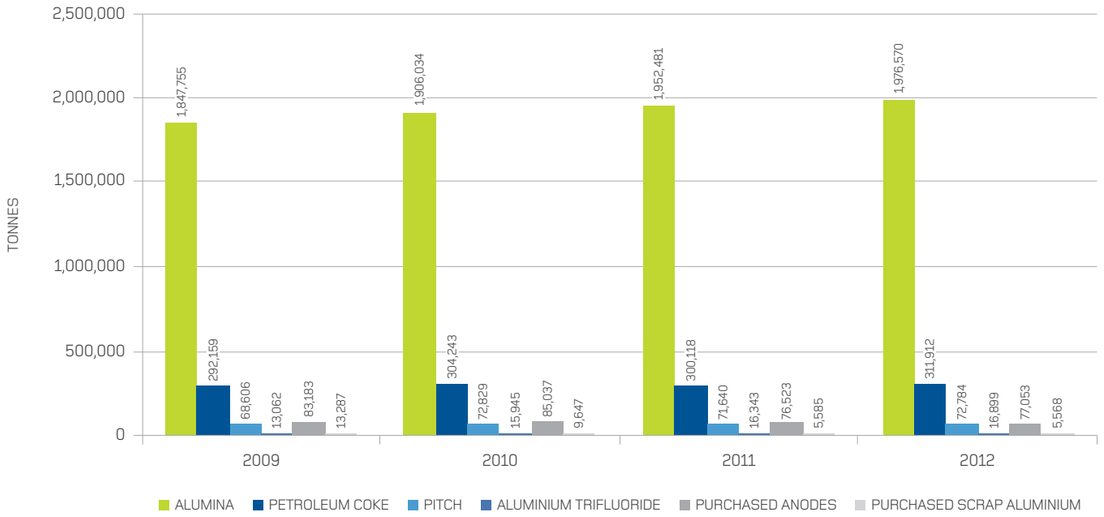
The main raw materials used in the production process include alumina (which is refined from bauxite), aluminium trifluoride (AlF_3 or ATF), petroleum coke and pitch. The other two raw materials, water and energy, are covered on pages 40 and 49.

Despite a 2 per cent increase in aluminium production between 2010 and 2012, the ratio of raw material input to aluminium production remained almost the same (2010: 2.38 tonnes; 2011: 2.38 tonnes; 2012: 2.39 tonnes). The raw material tonnages over the three years are shown in Table 4, while Figure 9 depicts the relative proportions.

TABLE 4: TONNAGE OF RAW MATERIALS USED IN 2010, 2011 AND 2012

Raw Material	**2010** (tonnes)	**2011** (tonnes)	**2012** (tonnes)
Alumina	1,906,034	1,952,481	1,976,570
Petroleum coke	304,423	300,118	311,912
Pitch	72,829	71,640	72,784
Aluminium trifluoride	15,945	16,343	16,899
Purchased anodes	85,037	76,523	77,053
Purchased scrap aluminium	9,647	5,585	5,568
TOTAL	2,393,735	2,422,690	2,460,787

FIGURE 9: USE OF RAW MATERIALS, 2009 TO 2012 (TONNES)



Energy

Power production

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

During 2012, the average thermal efficiency of the DUBAL Power Plant was 44.37 per cent, a moderate improvement over the 42.9 per cent achieved in 2010 (see Figure 10) and a substantial improvement on the 1990 figure of 31.2 per cent.

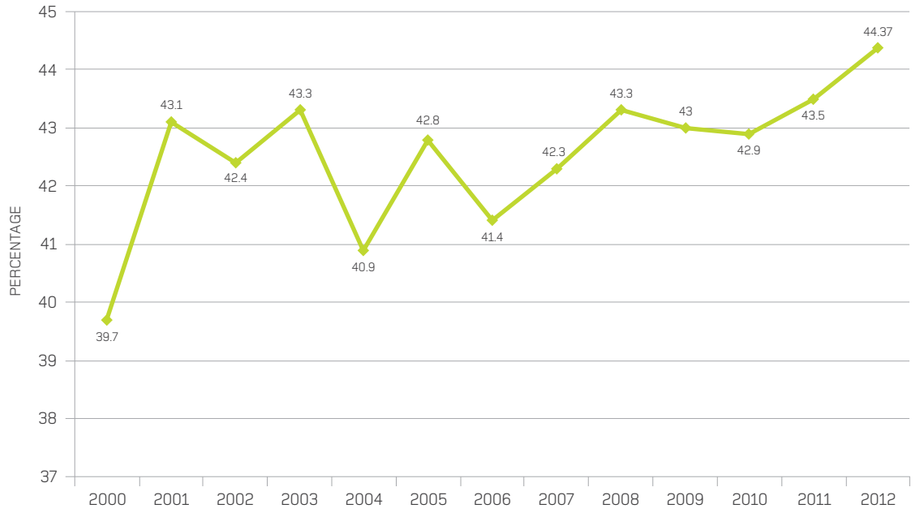
The overall increase in efficiency over the reporting period reflected the positive impact of the GTX (GT23) project (see page 42). The new co-generation cycle produces additional power from the existing steam turbines. The steam produced by the heat recovery steam generator (HRSG) is also available for water production through our existing seawater Desalination Plant. The overall project, completed at the end of 2011, will enable power generation efficiency of 45 per cent while offering the environmental benefit of reduced emissions.

Power consumption

The total energy consumption per tonne aluminium produced by DUBAL in 2010 was 170.79 million gigajoule (GJ/t Al), reducing to 166.88 million GJ/t Al in 2011 and 164.06 million GJ/t Al in 2012. An overall decline in energy consumption per tonne of aluminium produced has been achieved since 2000 (see Figure 11). While gas is the main source of fuel to generate electricity, additional sources include distillate as back-up fuel in case of shortages and anodes that are consumed in the electrolysis process.

As shown in Figure 12, the rate of energy consumption by electricity generation (gas) has declined from 150.94 GJ/t Al in 2009 to 144.55 GJ/t Al in 2012, while

FIGURE 10: THERMAL EFFICIENCY BASED ON LCV AND NET GENERATION OF THE DUBAL POWER STATION, 2000 TO 2012



electricity generation (distillate) dropped from 0.12 GJ/t Al in 2009 to 0.03 GJ/t Al in 2012. The proportional energy consumption by our Smelter Operations declined to 11.52 per cent in 2011 (2010: 11.62 per cent), but rose again in 2012 to 11.88 per cent. Within the smelter (Figure 13), the energy consumption of gas dropped from 3.65 GJ/t Al in 2009 to 3.35 GJ/t Al in 2012. The kilns' energy consumption rate declined from 1.16 GJ/t Al to 1.14 GJ/t Al over the same timeframe.

Energy-efficient technology

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

This culminated in DUBAL's proven, in-house developed DX Technology — a state-of-the-art, UAE flagship technology that performs among the most efficient reduction cell technologies currently available. Developed in 2006, DX Technology has been operational in a dedicated 40-cell potline at our Jebel Ali smelter complex since 2008 and produced 44,000 tonnes of molten aluminium in the twelve months to end-December 2012. Initially operating at 340 kA, the DX Technology cells at DUBAL now operate at 385 kA, offering several benchmark attributes that provide significant advantages, notably:

- Superb productivity of 2.9 t Al/pot/day at exceptionally high purity levels of 99.92 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 less than 13.21 kWh/kg Al and 95.2 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 0.410 kg C/kg Al. Moreover, DX Technology cells experience minimal anode effects (AEs) of less than 0.05 AE/pot/day, resulting in PFC emissions of 7 kg CO_2eq/t Al.
- Fully engineered versatility, allowing operating capability plus inherent potential for developing even higher amperage performance capacity.

A further step in amperage creep to 390 kA is planned and being executed. The aim is to test the capabilities of the technology to operate at higher amperage while maintaining the same or better specific energy consumption. The current operating amperage is 385 kA.

CASE STUDY

GT23 Project

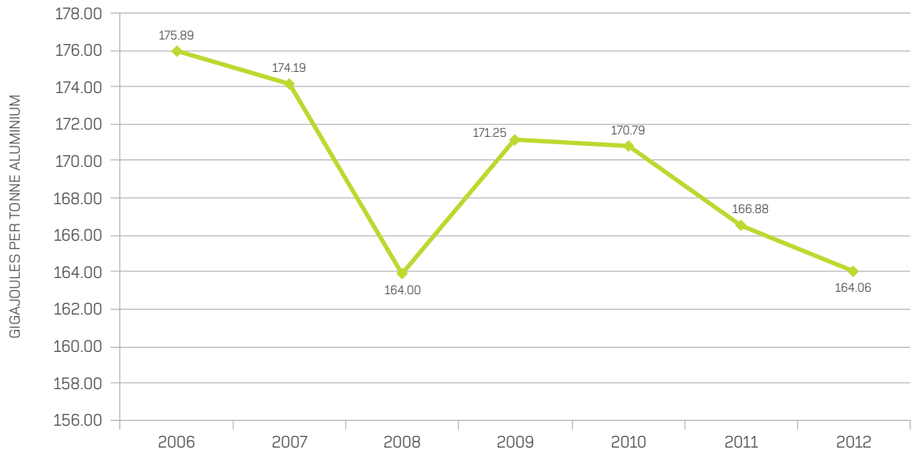
The GT23 project consists of one E-class gas turbine of type GT 13E2 from Alstom and one heat recovery steam generator (HRSG-X) that produces steam at double pressure levels.

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

This allows an increase in our installed power generation capacity, without the need for a cooling water source. Another benefit of this project is the improved generation efficiency, which leads to reduced fuel consumption and lower carbon dioxide (CO_2) and oxides of nitrogen (NO_x) emissions.

An initial study has shown that, with the assumed operation modes for the new GT23 cogeneration plant within the DUBAL Power Plant complex, the annual average generation efficiency can be improved from about 43 per cent to approximately 45 per cent, provided no forced outages take place. This means that our annual fuel consumption can be reduced by about 3 per cent under gas-firing operations.

FIGURE 11: TOTAL ENERGY CONSUMPTION AT DUBAL BASED ON GROSS CALORIFIC VALUE, 2006 TO 2012 (GJ/T AL)



DX Technology has also been installed in the 756-cell EMAL Phase I, where it began operating at 350 kA. DUBAL's involvement in this area entailed the development of a comprehensive DX Technology package; delivery of our proprietary, in-house developed DUBAL pot control and potline supervision system; technical assistance on-site; and a training or familiarization programme for EMAL personnel in all fields of a smelter's activity. The amperage of EMAL's DX cells has been increased to 380 kA concurrent with the EMAL Phase II expansion project, which has improved efficiency and increased the yield from these cells by 50,000 tonnes a year to 800,000 tonnes per year.

Through ongoing research and development, DUBAL's DX Technology cells have been re-designed in recent years to enable operation at even higher amperages. Five new generation cells, built in the pilot line at Jebel Ali, began operating at 420 kA at the end of August 2010. Mid-2011, the amperage of these pilot cells began to be increased gradually and reached 440 kA in February 2012, with stable results. The improved technology — known as DX+ Technology — is based directly on the inherently robust DX Technology. The industrial version, another UAE flagship innovation, is targeted to achieve best-in-class energy efficiency and environmental performance standards: the targeted specific energy consumption is less than 13.33 kWh/kg Al.

The AE frequency is very low but, more importantly, DUBAL's proprietary advanced control logic restricts the average duration of AEs to less than 10 seconds (a world benchmark for lowering PFC emissions). The average yield per pot is expected to be 3.4 t/day.

DX+ Technology has been licensed to EMAL for the 444-cell potline of Phase II; and its installation will enjoy support from DUBAL of similar scope and scale. Importantly, the cost per tonne capacity to construct a smelter incorporating DX or DX+ Technology is substantially lower than other technologies; while the construction period is also shorter. Dependability, prolonged pot life and improved workforce output further contribute to reduced operating expenditure and thus lower total cost of ownership. Taken together, these factors mean that DUBAL's reduction technologies provide a truly sustainable solution.

In December 2012, Alba announced that it had selected DX+ Technology for its Line 6 Bankable Feasibility Study. The study aims to determine the viability of Alba's sixth potline expansion project, which is expected to boost Alba's annual production capacity by approximately 400,000 tonnes of aluminium per year.

CASE STUDY

DX+ Reduction Technology – best-in-class performance

The product of further modelling and extensive research, DX+ Technology is a new-generation, UAE flagship technology that is based directly on the inherently robust DUBAL DX Technology. Five pilot DX+ Technology cells have been in operation in the Eagle Section of DUBAL's Jebel Ali site since 2010.

Having initially operated at 420 kA and now operating stably at 440 kA, DX+ Technology cells are ultimately expected to operate at 460 kA. DX+ Technology offers similar advantages to DX Technology in terms of production efficiency, energy consumption and environmental performance indicators; as well as the added advantage of higher productivity at a lower capital cost per installed tonne of capacity.
The robust, stable design of DX+ Technology yields the highest purity levels in the industry, with metal purity above 99.89 per cent.

The industrial version of DX+ Technology is targeted to achieve specific energy consumption of less than 13.33 kWh/kg Al; current efficiency above 95 per cent; and an average yield per pot of 3.4 t/day. The AE frequency is very low but, more importantly, DUBAL's proprietary advanced control logic restricts the average duration of AEs to less than 10 seconds (a world benchmark for lowering PFC emissions).

CASE STUDY

Optimizing energy consumption through modernization

DUBAL's expertise to retrofit older potlines has been demonstrated in a pilot project within Potline 1 at our Jebel Ali site, where seven existing D18 Technology cells have been completely modernized. The new D18+ Technology cells are the product of extensive in-house modeling aimed at incorporating more modern technologies and offer improved performance and economic competitiveness. Net specific energy consumption has reduced from approximately 15 kWh/kg Al to below 13 kWh/kg Al, and current efficiency is above 95 per cent. Moreover, the environmental performance of the D18+ Technology cells is on par with our DX and DX+ Technologies.

Importantly, DUBAL has the capability to offer its expertise in retrofitting older potlines and would provide similar support and services as part of a Technology Licence Agreement as offered for DX and DX+ Technologies.

A pilot project in Potline 1 of our Jebel Ali operations, implemented in 2012, has confirmed DUBAL's expertise to retrofit older potlines. The project entailed the complete modernization of seven existing D18 Technology cells within an operating potline, using extensively in-house modeled changes to allow for more modern technologies to be incorporated. The new D18+ technology offers improved performance and economic competitiveness, as well as considerable environmental benefits. Specific energy consumption is below 13 kWh/kg Al and AE frequency is considerably lower, thereby reducing the PFC emissions dramatically in comparison to the older technology. The project will also help reduce the generation of Spent Potlining (SPL) in the long-term.

FIGURE 12: ENERGY CONSUMPTION BY SOURCE, 2009 TO 2012 (GJ/T AL)

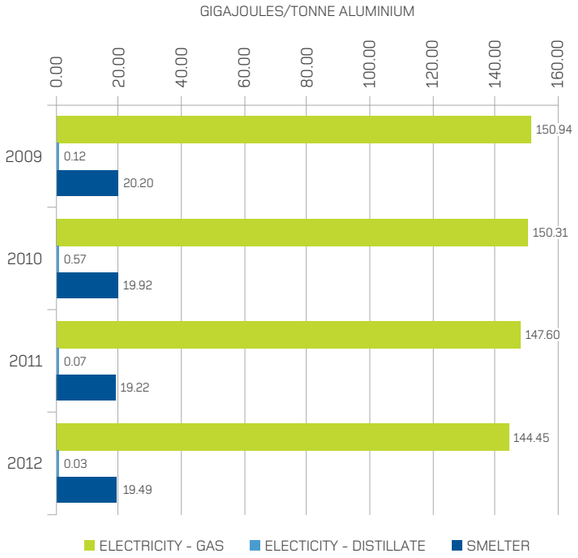
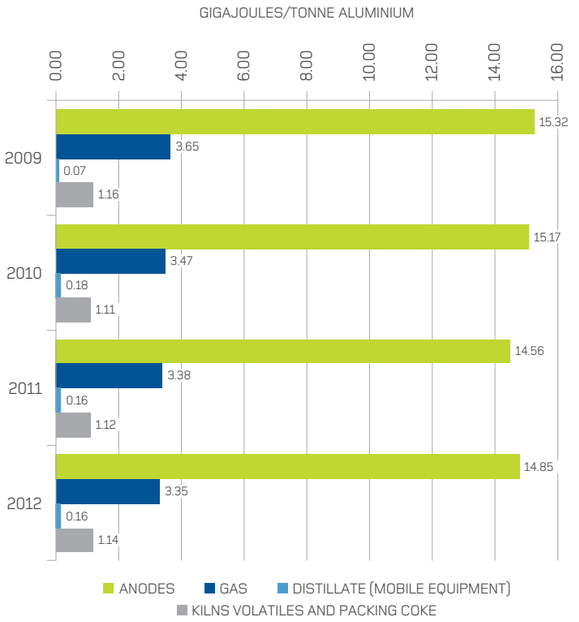


FIGURE 13: SMELTER ENERGY CONSUMPTION, 2009 TO 2012 (GJ/T AL)



DC energy for electrolysis

The IAI's target for the use of direct current (DC) energy for electrolysis was a 10 per cent reduction (on 1990 levels) by 2010. DUBAL strove to achieve this target, and in 2010 the energy consumption by our plant, at 14.82 DC MWh/t Al, was 5 per cent down on the 15.59 DC MWh/t aluminium recorded in 1990 (see Figure 14).

Good progress continued to be made, with 14.73 DC MWh/t Al being achieved in 2012 (2011: 14.72 DC MWh/t Al). Our energy conservation initiatives are discussed below and in the case study alongside.

Corporate focus on energy conservation

Despite being self-sufficient in terms of generating its own power requirements, DUBAL strives continually to minimize the power consumption of its operations. Several energy-savings projects have been implemented across the plant over the years. For example, lighting across our complex is continuously audited with the aim of identifying and implementing energy-saving options. Energy-saving bulbs have been fitted, resulting in a power consumption reduction of 12,510 kWh per year; and motion sensors have been installed in many areas, especially in unmanned substations. A plant-wide, full scale conversion to light emitting diode (LED) lighting conversion is planned for implementation as soon as practicable. Air-conditioning is a major power consumer at DUBAL, especially during the summer months. To minimize the air-conditioning load, the units' thermostats are set at 24°C during working hours and 27°C during non-working hours.

As a member of the DSCE, DUBAL has whole-heartedly adopted the directives issued by His Highness Sheikh Ahmed Bin Saeed Al Maktoum (President of Dubai Civil Aviation, Chairman of Emirates Airline Group, and Chairman of DSCE) to all DSCE member companies in April 2011 regarding the measures which the Dubai Government is taking to minimize energy consumption in Dubai, in fulfillment of DIES 2030. DUBAL's efforts in this area saved approximately 17,375,316 kWh over the first 21 months (i.e. to December 2012) of implementing the directives. The overall target is energy-savings of approximately 22,000,000 kWh per year by 2013.

Also under the auspices of our DSCE membership, DUBAL sponsored and played an active role in several high-level global and regional energy-related events during the reporting period. These included the Dubai Global Energy Forum (DGEF) 2011, Water Energy Technology Exhibition (WETEX) 2012 and the World Future Energy Summit (WFES) 2012).

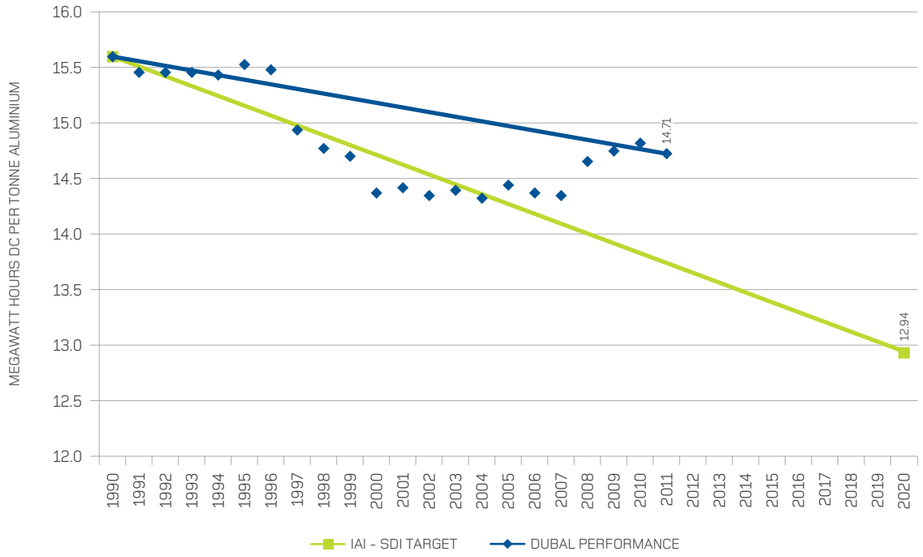
CASE STUDY

Be energy-conscious

As a member of the DSCE, DUBAL whole-heartedly adopted the directives issued in April 2011 by His Highness Sheikh Ahmed Bin Saeed Al Maktoum (President of Dubai Civil Aviation, Chairman of Emirates Airline Group, and Chairman of DSCE) to all DSCE member companies regarding the measures which the Dubai Government is taking to minimize energy consumption in Dubai, in fulfillment of the DIES 2030. The four 'quick wins' for energy conservation identified by the DSCE are proving effective at DUBAL. The directive to set air-conditioning thermostats to 24°C during working hours and 27°C outside working hours has been implemented, as has the directive to turn off all non-essential lights after working hours. Progress is on track to achieve the third directive, namely to change to energy efficient lighting, where our internal target is to complete 50 per cent of the changeover by the end of 2013. By the end of 2012, some 17,375,316 kWh had been saved. Overall, we are well placed to achieve total energy-savings in excess of 22,000,000 kWh per year by 2013.

The DSCE directives complement DUBAL's ongoing efforts to minimize the power consumption of its operations. For example, the extremely energy-intensive process to reduce alumina to primary aluminium is continually being enhanced so as to be more energy efficient. The energy consumption in the potlines of 14.71 kWh/kg aluminium in 2011 represented a 110,000 MWh savings over the 14.82 kWh/kg aluminium recorded in 2010. Our company has implemented numerous energy-savings projects over the years while others are being considered for implementation in the near-term. This approach reflects the energy-conscious culture nurtured at DUBAL, which is encouraged through targeted communications using appropriate channels – including a dedicated category in DUBAL's well-established Suggestion Scheme.

FIGURE 14: DC ENERGY FOR ELECTROLYSIS, 1990 TO 2012 (MWH/T AL)



Water

DUBAL is self-sufficient with regard to water supply; all our water needs are met through the processes of our on-site Desalination Plant (no ground water or other water source is utilized). Seawater is pumped through a series of intake pipes and passes through a multi-stage filtration system. About 74 per cent of this filtered water is used for cooling purposes and in the steam turbines in our Power Plant, while the remaining 26 per cent is desalinated.

Over the three-year reporting period, an average of 134,142 m³ of water was abstracted from the sea per hour, of which 97.6 per cent was discharged back to the sea. Of the volume returned to the sea, 84 per cent was cooling water with the remainder comprising a brine discharge from the desalination process. The brine discharge is typically hotter and more saline than the surrounding seawater at the discharge point. To ameliorate this, the two discharge streams are combined, cooled and filtered before going back to the sea. Through rigorous testing and monitoring procedures, we ensure that the water we discharge to the sea is within prescribed environmental standards.

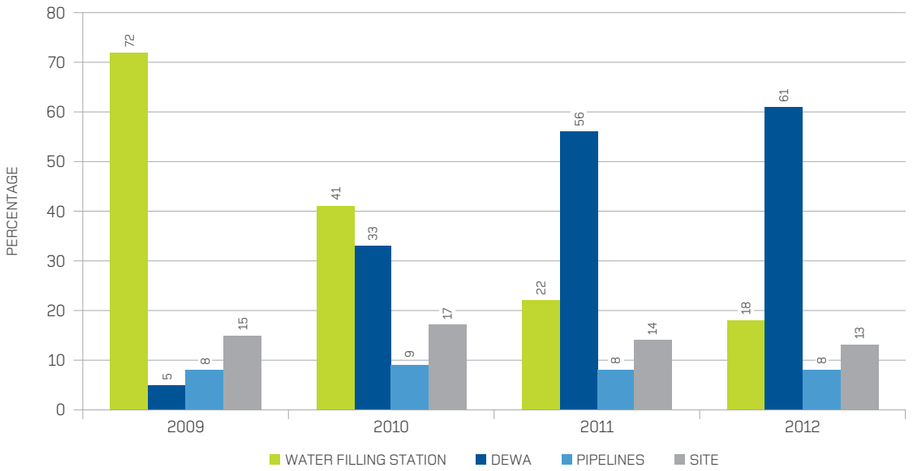
Our Desalination Plant produces potable water and distilled water. Table 5 summarizes the total sales and supply (external and internal) of desalinated water during the reporting period. Most of the distilled water we produce is used for industrial applications within DUBAL. In 2012, distilled water accounted for 7.25 per cent of production compared to 8.02 per cent in 2011 and 8.80 per cent in 2010. Conversely, potable water production accounted for 92.75 per cent in 2012 (2011: 92 per cent; 2010: 91.2 per cent).

The majority of the potable water we produce is sold to external consumers (91.32 per cent in 2012). This sweet water is either distributed through the DUBAL Water Filling Station or supplied to DEWA and adjacent industries through a series of pipelines. Internally, our primary use for potable water is on-site domestic purposes. The relative proportion of potable water consumption by end-user is depicted in Figure 15. The major share in the three years covered by this report was distributed through the DUBAL Water Filling Station.

TABLE 5: TOTAL SALES AND SUPPLY OF WATER, 2006 TO 2012 (MILLION IMPERIAL GALLONS/DAY)

	Units	2006	2007	2008	2009	2010	2011	2012
Potable water (external)	MIG/day	22.65	18.44	16.22	11.90	12.09	15.73	15.54
Distilled water (external)	MIG/day	0.39	0.41	0.39	0.44	0.49	0.52	0.48
Total external supply	**MIG/day**	**23.04**	**18.85**	**16.61**	**12.34**	**12.58**	**16.25**	**16.02**
Distilled water (internal)	MIG/day	1.37	1.71	1.57	1.51	1.79	1.71	1.48
Potable water (internal)	MIG/day	0.58	0.61	0.67	0.75	0.85	1.00	0.85
Total internal consumption	**MIG/day**	**1.95**	**2.32**	**2.24**	**2.26**	**2.64**	**2.71**	**2.33**
Total potable water	MIG/day	24.02	20.15	17.79	13.41	13.88	17.44	17.02
Total distilled water	MIG/day	0.97	1.02	1.06	1.19	1.34	1.52	1.33
Total water production	**MIG/day**	**24.99**	**21.17**	**18.85**	**14.60**	**15.22**	**18.96**	**18.35**

FIGURE 15: PROPORTIONAL WATER CONSUMPTION BY END-USER (2009 TO 2012)



Water conservation

We continually look for ways to reduce our water consumption and recycle water wherever possible. For example, the DUBAL Water Filling Station has been re-engineered to capture spilled water, which is now used to irrigate the landscaped areas (20,588 square metres) within our site. Extensive use is also made of recycled grey water (treated sewage effluent from our on-site sewage treatment plant (STP)) to meet our irrigation needs. In this regard, improvements to the STP operations yielded increased volumes of grey water in 2012 (65 per cent versus 64 per cent in 2011 and 66 per cent in 2010), effectively eliminating DUBAL's reliance on potable water for irrigation purposes.

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

We have also implemented measures to prevent increases in water consumption. For example, preventative maintenance helps minimize water wastage and losses; and our Desalination Plant has also installed additional flow meters in various areas throughout DUBAL to better manage our water consumption. Following the latter, we now report actual (rather than estimated) consumption, and flow restriction devices – such as low flow taps and reduced flush toilets – have been installed in common areas.

Water quality

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

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

Biodiversity

DUBAL occupies a 475 hectare site in Jebel Ali, approximately 35 km south of Dubai. Our site borders on the Arabian Gulf and the marine environment is the most sensitive ecological receptor in the vicinity of our site. The 20 km^2 Jebel Ali Wildlife Sanctuary is located approximately 7 km from our smelter operations. The coral communities in this conservation site are considered the most diverse in the region and therefore of national ecological importance. Two species on the International Union for the Conservation of Nature (IUCN) Red List – Green Turtles and Hawksbill Turtles – are found in the UAE's waters. Our efforts to conserve these species are detailed on page 52. DUBAL implemented an online system for discharge monitoring in 2009, and continues to monitor site effluents, and utilize independent technical expertise to ensure that our operations have the least possible impact on the environment. Likewise, any site expansion plans and operational changes undergo thorough environmental reviews to comply with local regulations and to ensure that our environmental impacts are minimized.

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

This includes a green belt concept whereby a vegetated buffer zone around the perimeter of our site has been developed and serves several purposes. The green belt comprises 1,443 specimens, including a species that is fluoride-tolerant, yet sensitive to hydrogen fluoride (HF) emissions, and therefore acts as a type of "early warning system" on higher than expected emission levels.

Vegetation surveys have been conducted regularly at DUBAL over the last eleven years or so (2001, 2006, and 2009). For this purpose, DUBAL appoints a Vegetation Expert to measure and monitor the impacts of the fluoride emissions from the operations on the vegetation around our premises. The most recent survey, which covered both the operational and nearby surrounding areas, took place in March 2012 and the expert vegetation consultant Professor Alan Davison from the University of Newcastle (UK) concluded that "Overall, the generally excellent health of the plants is a credit to DUBAL. It is the result of very low emission rates, low rates of fugitive emissions and investment in first-class landscaping and pro-active management of the plants. It is quite a remarkable achievement in such an extreme environment and much better than I have seen at other smelters. The results of the survey were very similar to those reported in 2009. HF injury was restricted to sites that were very close to the Potrooms, and decreased very rapidly away from these areas."

CASE STUDY

Marine ecological survey

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

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

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

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

CASE STUDY

Turtle conservation

There are two main species of marine turtles in the UAE's waters. All turtle species are experiencing serious threats to their survival. The main threats are pollution and changes to important turtle habitats, especially coral reefs, sea-grass beds, mangrove forests and nesting beaches. Other threats include accidental drowning in fishing gear, over-harvesting of turtles and eggs, and predation of eggs and hatchlings by foxes, feral pigs and dogs.

In DUBAL we use seawater for our operations, specifically in the Desalination Plant and the Power Station. We have two main channels for intake: one in the desalination area and the other in the power area. Green Turtles, considered as "Endangered" in the IUCN Red List, are found frequently in the chamber. Hawksbill Turtles, which are classified as "Critically Endangered" on the same list, are also found. Turtles not only play a vital role in the marine food chain, but conserving the environment also has a direct impact on humans.

On 23 May 2011 – World Turtle Day – DUBAL introduced new guidelines for conserving marine life, which included specific guidelines for rescuing marine turtles trapped accidentally at DUBAL's Power and Desalination stilling-chambers. The objective is to rescue trapped turtles from the chamber and release them back to the sea in a safe way. The guidelines include a requirement to conduct site inspections at the start of every day shift; and step-by-step instructions to conduct the rescue missions, should a marine turtle have been trapped. Once rescued, the general health and condition of the turtle is assessed and comprehensive records made (datasheets and photography). Healthy turtles are released back into the sea; while injured or sick turtles are referred to the Turtle Rehabilitation Unit in Madinat Jumeirah. Moreover, a database has been established to record all turtles rescued including details of their species, status and measurements. Stringent rules are in place prohibiting mistreatment, painting or any other practices that may harm or otherwise hurt the turtle. Should a trapped turtle be dead, the remains are either buried or sent to landfill. From the end of December 2010 to the end of 2012, 25 turtles were trapped in our stilling-chambers, one of which (a Green Turtle) was dead and appeared to have been dead a long time before entering the chambers. Of those alive and released back to the sea, 22 were Green Turtles and two were Hawksbill Turtles. The remains of the one Green Turtle were sent to the Turtle Rehabilitation Unit at Madinat Jumeirah.

CASE STUDY

DUBAL green belt project

The green belt project is one of the oldest environmental initiatives at DUBAL. The planting of trees on the site started in 1980, soon after commissioning of the smelter began in 1979. However, the green belt project began officially in 1997. Intended to protect the natural or semi-natural environments and to improve the air quality within the DUBAL site and farther afield, the green belt also offers many other benefits – such as pleasant aesthetics, and a contiguous habitat network for wild plants, animals and wildlife.

The main aims of the green belt are to establish a sustainable ecosystem around the operation site that will help to maintain the air quality. The initiative started with 664 *Conocarpus lancifolius* trees. In 2006, around 545 *Conocarpus lancifolius, Casuarina equisetifolia* and *Tamarix articulata* trees were planted. These trees were chosen because of their height, ability to absorb dust and tolerance to the harsh climate. These specific species were recommended by distinguished vegetation experts Professor L H Weinstein from Boyce Thompson Institute for Plant Research at Cornell University, and Professor A W Davison from School of Biology at University of Newcastle.

An additional 674 trees were added to the green belt specimens, each chosen for a specific location and function (such as a fluoride-tolerant species that is sensitive to HF emissions, and therefore acts as a type of "early warning system" on higher than expected emission levels).

Moreover, 340 trees were planted in the Power area in the Earth Hour Campaign on 30 April 2012. Later in the year an additional 40 trees were planted in the same area, bringing the total number of trees to 380. Also a new DUBAL Green Belt booklet was published online covering the history of the green belt and detailing its evolution. Today, the total number of trees planted in the various zones of the DUBAL green belt is more than 1,400. This quantity represents a sizeable contribution to the United Nations Environment Programme (UNEP) initiative to "Plant for the Planet" as part of the UNEP Billion Tree Campaign.

Emissions, effluents and waste

Air emissions

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

Power generation

DUBAL generates power via an on-site combined cycle power plant (CCPP). The burning of fossil fuels typically emits carbon dioxide (CO_2), carbon monoxide (CO), sulphur dioxide (SO_2), oxides of nitrogen (NOx) and particulate matter (most commonly respirable particulates, PM_{10}). Other emissions, like ozone and volatile organic compounds, tend to be less significant.

The level of SO_2, NOx and PM_{10} emissions is related directly to the fuel type used to generate power. Gas-fired plants are less polluting than oil-fired or distillate-fired plants which are, in turn, less polluting than coal-fired power plants. Save in the event of shortage or emergencies, in which case DUBAL's plant would operate using fuel oil, the plant is operated on the "cleanest" type of fossil fuel, natural gas — which contributes to reduced air emissions. We also deploy the best available technologies (such as low NOx burners) to further reduce air emissions during the power production process.

Ambient air quality is monitored continuously at strategically located stations around our Jebel Ali site. The results are analyzed at our on-site laboratory and interpreted by our environmental specialists. The volume of SO_2 emissions in 2012, at 15.1 kg/t Al, was marginally higher than the 14.7 kg/t Al recorded in 2011, but 13.4 per cent lower than in 2009. This is mostly attributable to a decrease in distillate consumption as well as a decrease in the percentage of sulphur in the petroleum coke purchased, and the purchase of fewer baked anodes. Some SO_2 emissions also emanate directly from the smelting process. The volume of NOx emissions continued to decrease year-on-year and, since 2007, has declined by 30.5 per cent. This is mostly due to higher machine availability and operational planning to rely more on the units which have low NOx burners.

Emissions of ozone-depleting substances generated through our cooling activities include minor amounts of refrigerant gases (commonly chlorofluorcarbons or CFCs). Over the years, we have taken several actions to eliminate our ozone-depleting emissions. As a result, the total CFC-11

CASE STUDY

Minimizing fugitive fluoride emissions from potlines

In a pre-bake aluminium reduction cell, HF is generated due to the continuous electrochemical oxidation of the hydrogen entrapped in the carbon anode matrix, leading to formation of HF emissions. Additionally, the presence of moisture content in alumina or electrochemical generation in anode leads to HF formation due to the following reaction:

$2AlF_3 + 3H_2O\ Al_2O_3 + 6HF$

The condition becomes more challenging as production is continuously increased, which leads to greater frequency of operational activities and results in higher HF emission.

HF emissions are known to have an adverse impact on humans and the urban environment. Hence, DUBAL adheres to strict performance standards to reduce HF emissions.

In our D20 technology potline, a reduction of 41 per cent in roof HF emissions (from its base level) was accomplished in 2010 after reviewing operational practices. Areas of improvement of operational activities included in the scope of this work are:

- Improvement of operational practices during anode-setting;
- Reduction in hydrogen emission during bathing-up of new pots; and
- Improvement of operational practice during normal pot operating conditions.

equivalent emitted was limited to 0.04 tonnes in 2010, 0.04 tonnes in 2011 and 0.02 tonnes in 2012. The greenhouse gas (GHG) emissions from our power generation activities are reported on pages 55 and 57.

Smelting

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

In accordance with our policy of continual improvement, a Continuous Emissions Monitoring System (CEMS) has been installed on all our potlines. CEMS is a useful tool for gathering process emissions data for environmental compliance demonstration; and process control and optimization. It also represents a proactive approach towards environmental protection while manual sampling is considerably reduced. By providing real-time data for HF roof emissions, the CEMS allows us to identify quickly and react to any deviations by making the necessary changes in the production process. In 2012, we met our target to reduce DUBAL's total fluoride emissions to 0.60 kg/t Al. We are continuing to work towards an even lower figure as part of our overall aim to minimize all our airborne emissions, particularly HF.

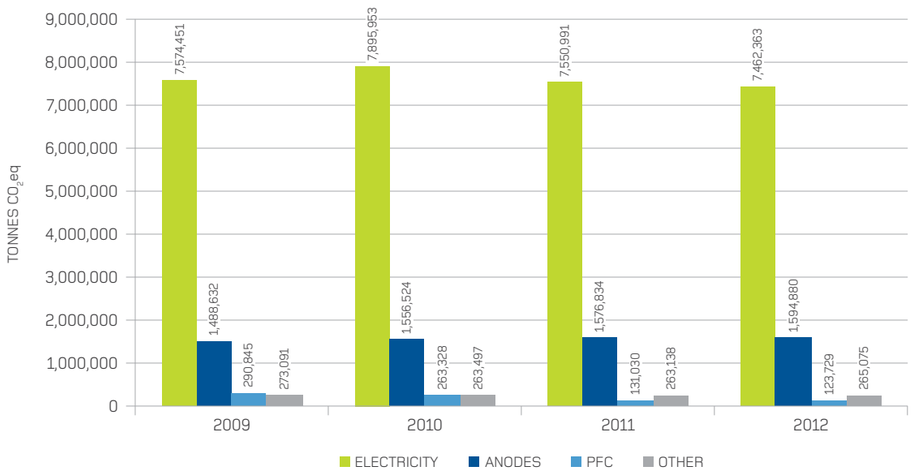
Initiatives to reduce HF emissions in our D20 potline during the review period resulted in a 41 per cent reduction in gaseous fluoride emissions from 2009 baseline emissions level (see the case study on page 54).

The smelting process also emits PFC gases during abnormal conditions of pot operation (AEs). Two PFC compounds are released during anode effects, namely tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). These compounds have greenhouse gas warming potential that is 6,500 and 9,200 times greater than CO_2. Accordingly, our PFC initiatives are dealt with under greenhouse gas emissions.

Greenhouse gas emissions
GHGs are generated by various sources in our operations, including:

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

FIGURE 16: GHG EMISSIONS (CO_2eq) BY SOURCE, 2010 TO 2012



Our total GHG emissions in 2010, 2011 and 2012 amounted to 9.98 million tonnes, 9.52 million tonnes and 9.45 million tonnes of CO_2eq, respectively. The breakdown by source remained virtually unchanged year-on-year, as shown in Figure 16.

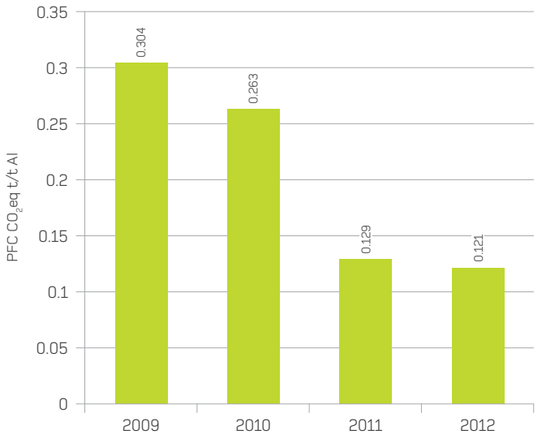
Various initiatives have been taken to reduce PFC (CO_2eq) emissions from our Smelter Operations, resulting in a 0.18 million tonne reduction in CO_2eq in 2012 compared to the 2009 base line (Figure 17). The PFC (CO_2eq) emission intensity from Smelter Operations also reduced, from 0.30 CO2eq tonnes per tonne aluminium (t/t Al) in 2009 to 0.13 CO_2eq t/t Al in 2011, and 0.12 CO_2eq t/t Al in 2012.

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

With regard to PFCs, DUBAL has initiated a programme to address our emission levels. The primary objective of the programme is to decrease the number and duration of anode effects, thereby minimizing the generation CF_4 and C_2F_6 gases. Our approach will involve changing our alumina feeding strategy and we expect to achieve an annual reduction in GHG emissions of approximately 20,000 tonnes of CO_2eq, thus minimizing environmental impacts.

Our power generation facility is the largest source of GHG emissions in DUBAL. Various initiatives have been taken to enhance the overall efficiency of power generation and hence reduce CO_2 emissions. Implementation of energy-efficiency projects like GTX, Evaporative Cooler and others has contributed greatly to this quest. Emission intensity from the power station has reduced from 7.9 t CO_2eq/t Al in 2009 to 7.28 t CO_2eq/t Al in 2012.

FIGURE 17: SMELTER PFC EMISSIONS INTENSITY REDUCTION (2009 TO 2012)



The above reflects DUBAL's commitment to achieving the IAI's target of reducing PFC emissions by 80 per cent by 2010 and 93 per cent by 2020 (from 1990 levels). By 2011, we had achieved an 88 per cent reduction, which was sustained in 2012.

Carbon management

It is widely accepted that the most common GHG is CO_2, which is therefore also the main cause of global warming and climate change. Recognizing the importance of this issue, DUBAL in 2009 implemented a "2015 Carbon Management Strategy and Implementation Plan", which will help us reduce the size of our carbon footprint. The plan outlines how we will undertake programmes to raise awareness about climate change and carbon emissions; implement systems to measure our emissions; identify carbon reduction and abatement options; and continually improve our own carbon performance.

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

In 2012, a new project was registered under the Clean Development Mechanism (CDM), through the United Nations Framework Convention on Climate Change (UNFCCC). The project is in our Casthouse Operations, where four melting furnaces with conventional cold air burners are used to melt cold/hot metal at a specified rate. The cold air burners operate on the principle of an air-to-gas ration with air and gas fed through on a proportionate basis. Aiming to reduce energy consumption, a new regenerative burner was installed as a trial project in one of the melting furnaces during 2008/2009. Through trial, gas consumption was reduced by 39 per cent. The project has also helped to reduce dross generation. Based on the success of the pilot project, a regenerative burner will be fitted to one melting furnaces by the second quarter of 2013, leading to an anticipated 9,700 tonnes per year reduction in CO_2 emissions.

Waste

Waste generation

The total quantity of waste generated from our operations was 51,909 tonnes in 2010 and rose to 56,046 tonnes in 2011 and 50,150 tonnes in 2012. The main types of waste we generate, reported differently from our 2008-2009 Sustainability Report, include:

- SPL and spent anodes (the largest proportion of waste by weight);
- Dross metal;
- Scrap metal;
- Carbon dust
- Non-hazardous process waste (such as kiln bricks and slag);
- Hazardous medical and liquid waste; and
- Food waste

The quantities generated by our other waste streams either remained relatively steady or decreased over the 2011/2012 period. For example, the volume of hazardous medical waste decreased by 68 per cent between 2010 and 2012. This reflects the efforts of the DMC to reduce the medical waste generated to less than 0.04 kg per visit.

No significant spills occurred at DUBAL during the reporting period. All water discharged from our site is discharged to the sea, and the average volume is reported under 'Water' on page 48. The only protected area close to the DUBAL site is the Jebel Ali Wildlife Sanctuary, as mentioned under 'Biodiversity' on page 51.

Waste recovery and recycling

Our waste recovery and recycling activities led to the recovery of 91.23 per cent of the waste we generated in 2012, improving marginally on the 87.73 per cent and 89.20 per cent achieved in 2011 and 2010 (see Figure 18). This high level of recovery is due partly to our practice of feeding certain "waste" materials back into the production process as raw material (including aluminium scrap, spent anodes and dross).

The waste from our waste streams is recycled, land-filled or treated on site. All our liquid waste is treated on-site and the sludge residue is sent to a hazardous waste landfill site. The relative proportions of hazardous and non-hazardous waste generated each year from 2006 to 2012 are shown in Figure 19.

FIGURE 18: WASTE DISPOSAL BY METHOD 2009 TO 2012

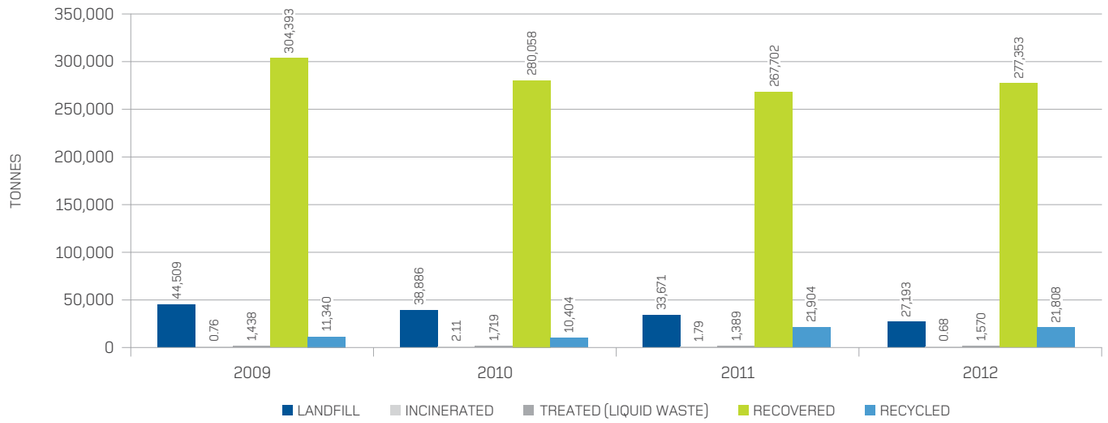
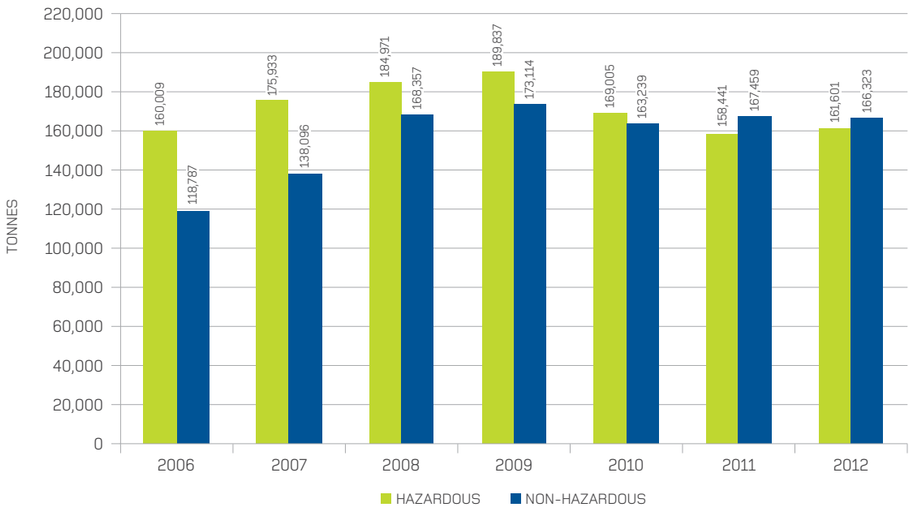
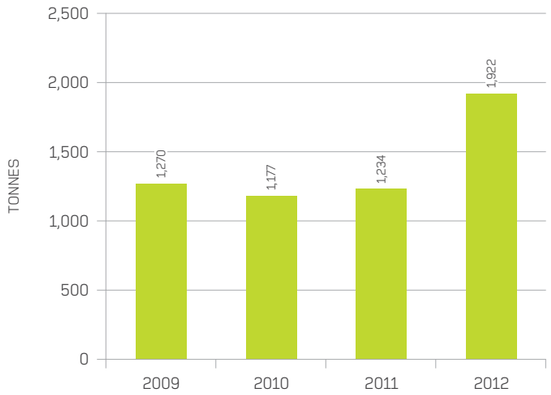


FIGURE 19: RELATIVE PROPORTIONS OF HAZARDOUS AND NON-HAZARDOUS WASTE PRODUCTION, 2009 TO 2012



The only waste shipped internationally by DUBAL is carbon dust, which is recycled outside the UAE. The relative tonnage of this shipped waste over the past four years is shown in Figure 20.

FIGURE 20: TONNAGE OF CARBON DUST TRANSPORTED FOR TREATMENT OUTSIDE THE UAE, 2009 TO 2012



Waste minimization

DUBAL's commitment towards sustainable development and environmental protection was reiterated during the review period through the initiation of a waste reduction drive with the ultimate objective of zero waste to landfill in the near future. In line with our continuing quest to minimize, re-use and/or recycle waste and eliminate the need for landfilling, a Waste Management Committee was established in June 2011 with the mandate to implement the waste reduction initiative.

The main aim of the Waste Management Committee is to drive DUBAL's objective of zero waste to landfill. In this regard, are committed to dramatically reducing DUBAL's waste output by:

- Operating in an efficient and financially sustainable way to supply structures and solutions that satisfy the needs of customers and add stakeholder value.
- Optimizing the eco-efficiency of their structures throughout their lifecycle by increased resource utilization.
- Committing to promote the re-use, recovery and recycling of all products and by–products.
- More detailed planning.

The committee has, in consultation with the various areas, developed and begun implementing action plans to achieve the zero waste to landfill objective. Regular meetings are held to discuss initiatives, make plans, share ideas and track progress.

CASE STUDY

Zero waste to landfill

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

DUBAL's focus on waste management is fully aligned with both the global shift from waste disposal to waste management. Already, many countries have developed and implemented plans to reduce their dependence on landfills and increase recycling. Here in Dubai, it has been reported that the excessive number of migratory birds attracted to the food waste at the Jebel Ali landfill site is a cause of serious concern to the Aviation Department, which has called for the closure of the site in near future.

These trends reflect the international focus on sustainable development, in terms of which it is believed that waste levels can be significantly reduced by forward thinking and careful planning. Given DUBAL's track-record for insightful and innovative solutions devised through effective problem-solving and analytical-thinking techniques, the committee is confident of devising effective waste management strategies.

Already, DUBAL is the Gulf Co-operative Council (GCC) pioneer in terms of recycling SPL, one of the most hazardous wastes generated by our industry (see page 61). Through the efforts of the Waste Management Committee (see alongside), DUBAL is making good progress towards our vision of creating a sustainable environment, health and safety culture — with the ultimate ambition to protect people and the planet.

Moreover, the STP at DUBAL has virtually achieved zero waste to landfill status. All treated water is used for irrigation purposes on our site; while the sludge is residue is then used for composting purposes.

In addition, the DUBAL Technical Laboratory recycles all waste in three main ways, so as to ensure zero waste to landfill. These comprise recycling the sample material collected weekly from potlines, rodding, casthouse and carbon plant; minimizing the use of organic solvents in test procedures, including revision of the tests where possible; and sending all broken glass and empty glass/plastic bottles to a recycler.

CASE STUDY

Reducing greenhouse gas emissions

Various initiatives have been taken to reduce PFC (CO_2eq t/t Al) emissions from DUBAL's Smelter Operations. The following projects have been implemented to enhance process efficiency, with the ultimate aim of reducing PFC (CO_2eq) emissions:

- Enhanced monitoring of anode effect duration and frequency;
- Modification in alumina feed rate parameters (demand feed logic);
- Introduction of auto feed logic;
- Modification of anode setting dumps; and
- Changes to anode-setting practice.

The net outcome of these initiatives was an 0.18 million tonne reduction in PFC (CO_2eq) in 2011 compared to the 2009 base line. The PFC emission intensity from Smelter Operations also reduced, from 0.30 CO_2eq t/t Al in 2009 to 0.12 CO_2eq/t tAl in 2012. Overall, our PFC (CO_2eq) emissions intensity reduced by almost 50 per cent.

In December 2010, Dr Jerry Marks (an independent consultant from IAI) took PFC measurements at DUBAL. He confirmed the very low PFC emission rate of DX Technology. DUBAL as per IPC protocol, verified its PFC emission by an accredited independent consultant.

CASE STUDY

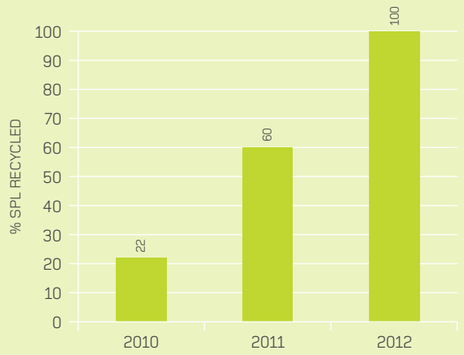
SPL recycling

One of DUBAL's strategic objectives is to eradicate land-filling of SPL.

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

Strict compliance with regulations is required for recycling SPL, which is categorized as a hazardous waste by the authorities. A complete environmental impact assessment (EIA) was performed and approved by the authorities in November 2009. Subsequently, a number of loads of refractory material have been shipped to the cement company. This development has effectively diminished the need to send SPL to a hazardous waste site. The tonnage of SPL recycled has risen incrementally each year, from 22 per cent in 2010, to 67 per cent in 2011 and 100 per cent in 2012, as shown in Figure 21 below.

FIGURE 21: PERCENTAGE SPL RECYCLED, 2010 TO 2012



Products and Services

DUBAL's products are fully compliant with REACH regulations; REACH being the European Union Regulation on chemicals and their safe use (EC 1907/2006). Safety Data Sheets exist for all DUBAL products, in accordance with these regulations. Safety rating of DUBAL's products is not required.
We manufacture primary aluminium products that are used by our customers to produce end-user items. Our entire production is made-to-order, meeting exacting customer specifications (e.g. aluminium purity, alloy blends, and so on). All products are fully labeled to reflect these attributes. Importantly, aluminium is infinitely recyclable, making it an extremely environment-friendly material.

The main raw materials used in DUBAL's production process are alumina (which is refined from bauxite), ATF, petroleum coke and pitch. The relative proportion of these materials cannot be altered materially. We also consume water and energy. Through on going improvements in production efficiencies, the ratio of raw material input to aluminium produced continues to improve. As mentioned under Waste Recovery and Recycling on page 58, efforts are made to use recycled products in our own operations. This includes recycling scrap from our customers, where logistically feasible. Certain of our customers in the UAE make use of this service and we receive around 6,000 to 8,000 tonnes of profile scrap every year from these local customers for recycling.

Throughout the reporting period, DUBAL did not incur any fines or non-monetary sanctions for non-compliance with environmental laws and regulations.

04

Social Sustainability

DUBAL recognizes the need to be socially responsible towards all stakeholders, whose rights are respected without compromise; and to comply with international laws.
Every effort is made to maintain a healthy and safe working environment for our employees, to offer ample opportunities for career growth and to provide competitive remuneration packages. We acknowledge our responsibilities to society by supporting organizations and initiatives that target sustainable community development.

Employment

At the end of 2012, 3,802 people were in DUBAL's full-time employ (including regular and fixed-term employees). This, coupled with 165 temporary employees, brought the total staff complement to 3,967 — a decrease of 0.1 per cent compared to 2011 (3,971 people). Three main staff categories are in place (with the number of staff in each category in brackets): senior management, grades 19 and above (76); supervisory grades 11 to 17 (903); and non-supervisory grades 5 to 9 (2,823). At grades 5 and 6, our workforce comprises only male employees. We recruit female employees from grades 7 and above, most of who work in administration and non-industrial departments.

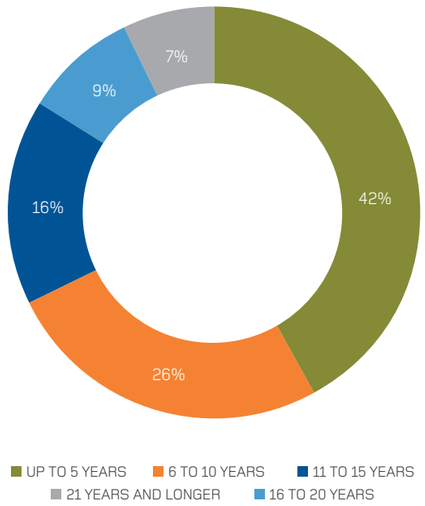
Currently, 58 per cent of our regular employees have worked at DUBAL for more than five years (see Figure 22). Of these, 32 per cent have been with our company for more than ten years (2011: 31 per cent; 2010: 31 per cent) and 7.5 per cent have more than 20 years' service.

Our employee base remained stable throughout the review period. Most employees who left DUBAL did so for personal reasons. The average staff turnover rates (due to resignations) for 2012 (3.82 per cent) was slightly higher than in 2011 (3.03 per cent). Male employees accounted for a higher proportion of the turnover in 2012 (93 per cent versus 90 per cent in 2011). A change also occurred in the turnover demographics by age: the proportion of 20- to 30-year-olds leaving DUBAL dropped from 44.83 per cent to 29.17 per cent year-on-year, while that for 51- to 60-year-olds declined from 6.9 per cent to 5.56 per cent. Conversely, the proportion of 31- to 40-year-olds leaving DUBAL increased from 31.03 per cent to 43.06 per cent year-on-year, while that for 41- to 50-year-olds rose from 17.24 per cent to 22.22 per cent.

Most DUBAL employees are employed on a full-time basis, in terms of which they enjoy a variety of financial and non-financial benefits. Temporary employees comprise a very small percentage of our workforce, at 4 per cent in 2012. Such employees receive a specific rate as per their individual contractual agreements.

In addition to a basic salary, we provide a housing allowance to our permanent employees and, where appropriate, a transport allowance. The value of these additional benefits depends on their individual circumstances as determined by our HR policies. Other allowances are granted according to the nature of work undertaken, the individual circumstances and legal entitlements of employees. Such allowances include: National allowance; Shift allowance; Technical allowance; Specific work allowance; Site allowance; High voltage allowance; Special allowance; and Children's education allowance.

FIGURE 22: PROPORTIONAL LENGTH OF SERVICE, 2012



As a caring and dependable employer committed to best practice in every area of our operations, DUBAL also provides other benefits for our workforce. These are based on eligibility criteria and individual circumstances and include: Paid sick leave; Annual leave; Leave travel allowance; Personal leave; Compassionate leave; Maternity leave; Paternity leave; Hajj leave; Unpaid leave; Bereavement leave; Medical health insurance; Employee insurance; and Workman's compensation insurance.

Where our employees have to live away from their families for extended periods, we sponsor visas for their family members to visit them in Dubai. This facility is granted only for employees residing in our company's Residential Area.

We also support employees who want to move their families to Dubai. In addition, we provide a Summer Training Programme for employees' children who may be interested in acquiring valuable work experience during their summer holidays.

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

Labour/management relations

Collective bargaining is not permitted under UAE law. However, giving a free voice to our employees is part of DUBAL's ethos and integral to our "social contract" with our employees. A number of communication channels have been initiated through which employees can raise grievances, suggest measures for improvement and express their satisfaction levels. Formal corporate communications channels also exist for disseminating information relating to the company, its policies and important developments.

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

Since 2009, HR Communication Meetings have been held as a direct response to the findings of the DUBAL-wide Voice Your Opinion

Full and part-time employees

3,802
2012, full-time

165
2012, part-time

Total employees

3,971
2011

Staff categories

76
Senior management
Grades 19 & above

903
Supervisory
Grades 11 to 17

2,827
Non-supervisory
Grades 11 to 17

Average staff turnover

3.82
2012

3.03
2011

Proportion of turnover

93%
2012

90%
2011

employee satisfaction survey in that year, which identified communication as an area for improvement. These meetings serve to inform employees of any administrative or department-specific policy changes related to their area of work and have helped create a more transparent and interactive communication process. Areas of discussion have included annual leave, the quality of food at the canteens, use of our shuttle buses, changes in HR policies, updating employees regarding various company-related subjects, and so on. A total of 1,044 meetings were conducted during the three years covered in this report: every department was visited two or three times during each year and it is estimated that every employee participated in these meetings at least twice per year.

According to our HR Policy, no-one under the age of 18-years-old is employed at DUBAL. No operations were identified as being at risk of forced or compulsory labour during the reporting period.

CASE STUDY

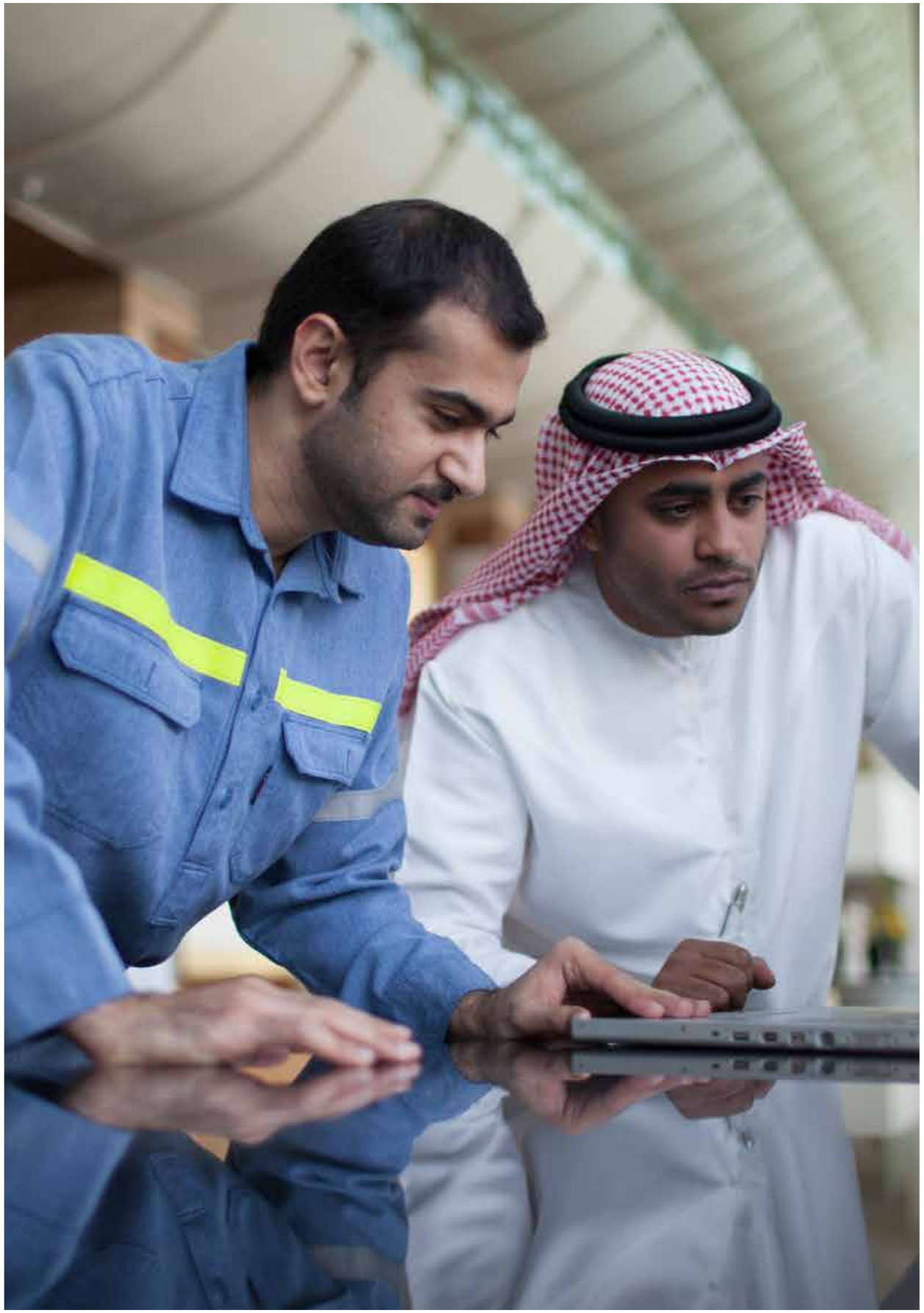
Employee involvement

DUBAL has an active BE programme — a company-wide umbrella structure for all in-house improvement endeavours. This includes team-based projects and activities. One such initiative is our employee Suggestion Scheme, which has been in operation since May 1981 and has won a number of international awards.

During the three year review period, winning ideas submitted to our Suggestion Scheme again received several international accolades from organizations like Ideas.Arabia, Ideas.UK, and Ideas.America (formerly known as the USA Employee Involvement Association).

2011 marked the 30th anniversary of the Suggestion Scheme's inception. This was celebrated by implementing several campaigns to recognize contributors and encourage greater employee participation. By the end of the year, the cumulative savings arising from implemented suggestions had reached almost AED 97 million over the 32 years of the scheme.

During 2012 alone, 27,982 suggestions were submitted to the scheme, of which 19,269 were implemented and awarded, together giving an audited savings of more than AED 19.58 million (US$ 5.32 million). The Suggestion Scheme also achieved 100 per cent participation from eligible employees in 2012.



CASE STUDY

Voice Your Opinion

Voice Your Opinion is our three-yearly employee satisfaction survey, the third survey having taken place in 2011. In total, 3,341 DUBAL employees (84 per cent of our workforce) participated and responded to questions on the following themes:

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

As in prior years, the survey was conducted by Hay Group, an international management consultancy, and analysed using industry benchmarks. DUBAL ranked 7 per cent above the Global Industry Norm, 4 per cent above the Middle East Norm and on par with the High Performing Companies Norm. Jan Marsli (Head of Insight ME, Hay Group) had this to say about our results: "In many ways it was astonishing to see the DUBAL survey results, because they are so very much more positive compared to what is normal in the Middle East or other similar work environments across the globe. The results are on par with what we call high performing work environments; that is organizations where a vast majority of staff work together with leadership towards shared success.

Mutual trust and respect between employees and leadership is perhaps the most common feature of such organizations. DUBAL has clearly established such a working climate, and enjoys a very loyal workforce that is willing to put in the extra effort to meet customer needs. The relationship between employees and leaders is also very strong. In return DUBAL is offering world-class training and development opportunities for staff, and a climate where people feel respected. There are of course challenges, no organization is perfect. What is key here is that when we look at DUBAL staff feedback, compared to other similar organizations, DUBAL comes out as one of the best industrial workplaces, be it in the Middle East or elsewhere in the world."

The findings indicated that our key areas of strength relate to quality and customer focus; strategy and direction; safety and environment; innovation; tools, equipment and job-related information; training; and job satisfaction. The survey also identified some areas for improvement, including immediate manager; communication; recognition; workload; career development; and compensation. Practical solutions were identified for these areas at corporate and department level, action plans were implemented and progress on the same was reported to employees.

Our employees' opinions are valued and insightful, providing us with some good ideas to improve our performance. A corporate Action Plan and Department Action Plans for each area have been fully implemented, with progress having been communicated regularly to our employees via Imtiaz (DUBAL's employee newsletter) and dedicated Voice Your Opinion 3 News Updates. The next Voice Your Opinion survey is planned for the first quarter of 2014.

Occupational Health & Safety

We firmly believe that safety at the workplace is everyone's responsibility. We therefore work collaboratively across different teams to ensure that this goal is achieved. Our Quality, Environment, Health and Safety Policy sets out our shared responsibilities and commitment to work towards the safety and health of our employees.

We have trained and appointed 150 EHS representatives, which effectively cover 100 per cent of our workforce. Two EHS representatives are appointed per shift in operations and one for other areas of the business. Of these representatives, 25 are involved in the plant-wide EHS Representatives Meeting, held on a monthly basis with the Safety Team.

These 25 representatives are also responsible for meeting with departmental managers and holding regular meetings with them to discuss issues and report on progress.

In addition, we have developed a Safety Training Programme, which provides comprehensive information on Occupational Health & Hygiene (OHH) and safety topics. It also highlights issues to raise awareness among our employees. We have developed a safety training matrix that identifies generic and specialized training needs for all employees, based on job grades and tasks that each employee undertakes. Visitors and contractors are also given an induction on our safety practices.

The full list of courses offered in terms of the Safety Training Programme during the review period is listed in Table 6.

TABLE 6: SAFETY TRAINING PROGRAMME COURSES OFFERED IN 2010, 2011 AND 2012

- Safety Management OHSAS 18001:2007
- Hazardous Chemical substances
- Hazardous Identification and Reporting
- Safe Manual Operations
- Basic OHS Knowledge
- PPE Management
- Lifting Equipment and Operations
- Risk Assessment and Analysis
- Incident Investigation and Reporting
- Safety Inspections and Principles
- Office Safety and Ergonomics
- Hot Work Operations
- Warehouse Operations Training
- Tamahal Behavioural Safety
- Gas & Atmospheric Testing Authorisation
- Basic Environmental Awareness
- Permit-to-Work Receiving Authority
- Supervisor Behaviour Based Safety
- EHS Rep Training
- Confined Space Training
- Defensive Driving
- Hand Tools
- Occupational Health and Hygiene
- Ladder Safety
- Machine Guarding
- Permit-To-Work Issuing Authority
- Permit-to-Work Refresher Training

CASE STUDY

Encouraging safe behaviour

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

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

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

CASE STUDY

Celebrating safer behaviour

As part of our ongoing journey towards Safety Excellence, embodied in the quest towards our ultimate goal of "zero harm to people", DUBAL hosted the first-ever annual DUBAL Safety Awards in 2011 for which the awards were presented in 2012. The primary objective of the awards is to celebrate our achievements to date, recognize and reward the achievers to motivate the employees, sustain the record performances, and set new targets. Recognition is given to those departments, teams and contractors that play a significant role in improving our safety behaviour and thus our company's overall safety performance.

Detailed guidelines for the DUBAL Safety Awards were issued and nominations for the awards in various categories were invited. A panel of judges then decided the winners in each category, the criteria being based on both leading and lagging indicators. The awards were presented in four categories:

- Team Awards
- Individual Awards
- Lost Time Injury (LTI) Milestone Awards
- Long-term Safety Achievement Awards

The inaugural DUBAL Safety Awards ceremony took place on 27 February 2012 during a gala ceremony graced by our President & CEO and attended by the majority of DUBAL employees and contractor representatives. This new recognition and reward platform is expected to inspire further continuous improvement in DUBAL's safety performances by encouraging behaviour-based safety culture in the company.

Our Safety Training Programme comprises over 26 courses, and the level of training is on an upward trend (see Figure 23). In 2012, a total of 2,142 employees had attended training by the end of October.

The total number of lost work days at DUBAL has decreased significantly since 2006, when 473 days were recorded. The number declined to 121 and 55 days respectively in 2008 and 2009, but rose again to 188 days in 2010 and 220 days in 2012. An all-time low of 22 days was achieved in 2011. This reflects the effectiveness of our OHH and Safety Programmes: together, they have created greater awareness of occupational health and safety issues while encouraging behavioural changes at the workplace.

From a safety perspective, DUBAL consistently strives for a lost-time injury frequency rate (LTIFR) and fatal injury frequency rate (FIFR) of zero (measured per million man-hours). While not yet achieved, these targets remain non-negotiable and have resulted in an overall improvement in our company's safety performance over the years: the Total Recordable Injury Frequency Rate (TRIFR, comprising lost time injuries, restricted work and medical treatments per million man-hours) declined from 13.12 in 2004 to 5.65 in 2008 and 4.27 in 2009. Since then, the downward trend has leveled out slightly, but the 2012 rate of 3.26 and 12-month rolling rate represents a 71 per cent drop in TRIFR since 2004 (see Figure 24).

FIGURE 23: NUMBER OF EMPLOYEES WHO ATTENDED SAFETY TRAINING (2010, 2011 AND 2012)

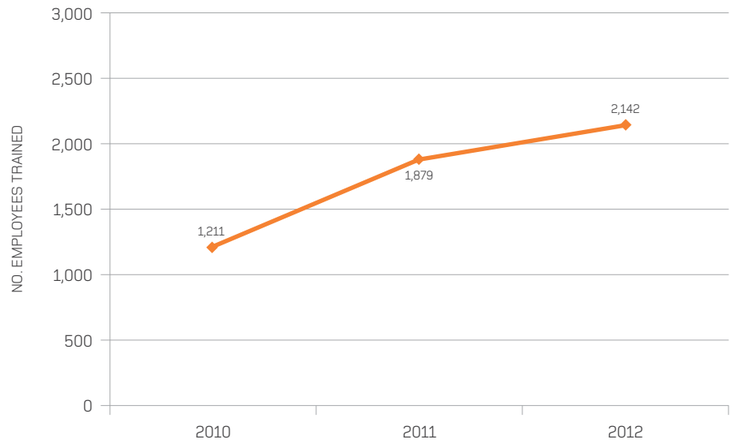
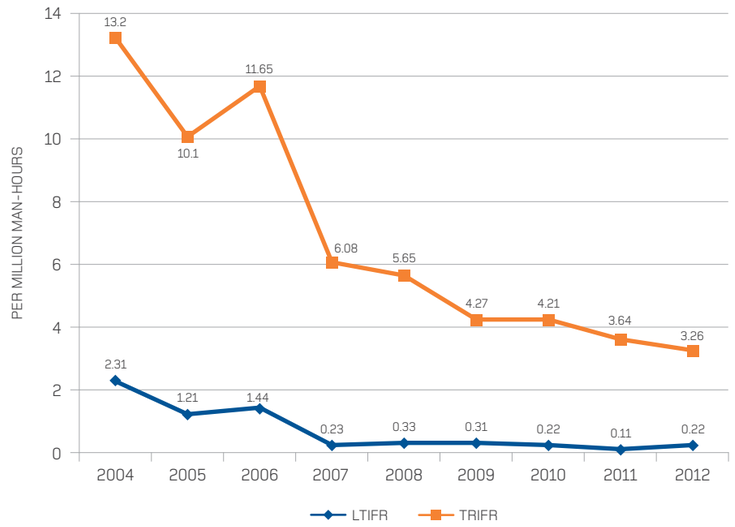


FIGURE 24: LOST TIME AND TOTAL RECORDABLE INJURY FREQUENCY RATES AT DUBAL, 2004 TO 2012



CASE STUDY

Occupational Health Surveillance (OHS) Programme

While working at DUBAL, all employees are exposed to various workplace health stressors to some degree. To ensure that employees are protected from the adverse health effects, DUBAL has put management programmes in place to eliminate, control or minimize these hazards/stressors. For example, the OHH team and DMC ensure that each employee undergoes a periodic OHS appropriate to the nature of his/her workplace exposure.

The medical check-up component of the OHS aims to detect the adverse health effects of exposure to various stressors and to assess the effectiveness of control measures in place; and when required, to initiate early treatment, rehabilitation and recovery programs for DUBAL employees. The OHS is repeated every two years for smelter employees; and every three years for administrative employees, with the aim of ensuring that our employees remain fit to perform their jobs.

The OHH team is responsible for inviting employees; however employees are empowered through the "ZEH03" SAP transaction to view their next due date for OHS medical and call for scheduling themselves. On the day of their OHS medical examination, employees are require to have fasted for 12- to 14 hours for blood tests which includes lipid profile (cholesterol), fasting blood sugar, and complete blood count; and a urine test. They are also asked to avoid noise exposure for a minimum of 14 hours for accurate results of the Audiometric (Hearing) Test.

The OHS medical examination starts with documentation of occupational exposure and medical history. Then it proceeds to a range of medical tests: blood pressure, physical measurements, vision tests, ECG for those aged 40-years and above, and spirometry (for those exposed to respiratory hazards). Once completed, the results of the performed tests are explained to the employee and recommendation is given. Then the OHS medical service is closed (in SAP) and the employee will receive an SMS of his/her OHS result. Finally, the employee has the privilege of requesting for his/her OHS detailed examination results.

When injuries do occur, we implement measures to avoid similar occurrences in the future. We aim to reduce the injury rate at DUBAL even further in 2013.

The DUBAL behavioural safety observation process, known as Tamahal, was established in 2008. Through continual improvement and development, observations have gone from being entered manually to a full electronic database. An awareness campaign entitled "Tamahal, don't take shortcuts" was launched mid-June 2010, taking the form of numerous workshops held in the respective departments. External training was conducted simultaneously by a vendor called B-Safe Management Solutions. This was followed by a six-month training process, which began in December 2010. Dr Dominic Cooper (CFIOSH CPsychol) delivered two training courses, both tailor-made for DUBAL. Positively Engaging Employee Risk (PEER) Training was conducted for the DUBAL executive team and selected individuals from the respective operational areas, and was completed in April 2011.

The Tamahal process has continued to yield positive results. Good employee participation is recorded on a regular basis, leading to the success of Tamahal being recognized in all departments across DUBAL. This change inspired the DUBAL Safety Excellence Awards, held for the first time in 2011 (see the case study on page 71).

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

By design, our OHH Programme detects the earliest signs of any occupation-related health illnesses and injuries by conducting in-house pre-employment medical check-ups, pre-employment (DUBAL local and overseas) short medical check-ups and a periodic occupational health surveillance programme. Special emphasis is placed on monitoring the health of employees working in operations that are exposed to noise, heat and chemicals (such as dust, HF, CTPV, SO_2 and total fluoride). We respond to any health-related issues detected by placing affected employees immediately into a rehabilitation and recovery programme that is tailored to their needs. The OHH Programme also helps us identify, investigate, diagnose, report and manage occupational health illnesses to facilitate the recovery of an employee.

The OHH department is responsible for monitoring the following illnesses on a periodic basis to ensure the fitness of employees during their performance of their duties and to tackle any health deterioration at an early stage:

- Occupational Heat Stroke
- Occupational Heat Stress
- Occupational Heat Rashes
- Occupational Bronchial Asthma
- Occupational Back Pain
- Occupational Neck Pain
- Occupational Impaired Hearing
- Non-occupational Neck Pain
- Non-occupational Bronchial Asthma
- Occupational Allergic Contact Dermatitis
- Occupational Friction Dermatitis

Since 2000, DUBAL has actively worked to reduce the number of lost working days due to heat-related illness cases within our workforce. The initiative has gained additional emphasis since 2006 through the dedicated "Beat the Heat" summer programme (renamed "Beat the Heat and Be Safe" in 2011). The impact of this is highlighted in Figure 25 where zero lost days as a result of heat stress were recorded in all three years (i.e. for the fifth, sixth and seventh consecutive years). The number of heat illness cases also dropped significantly as shown in Figure 26.

FIGURE 25: LOST WORKING DAYS DUE TO HEAT STRESS AND HEAT RASH, 2004 TO 2012

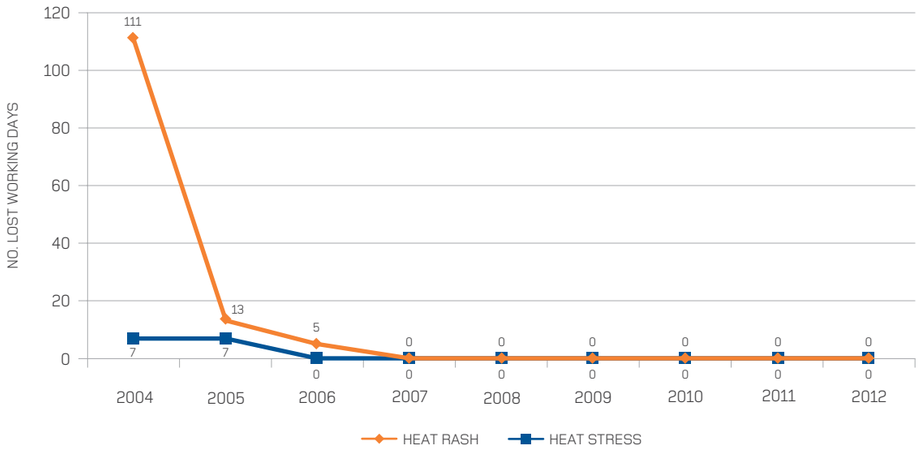
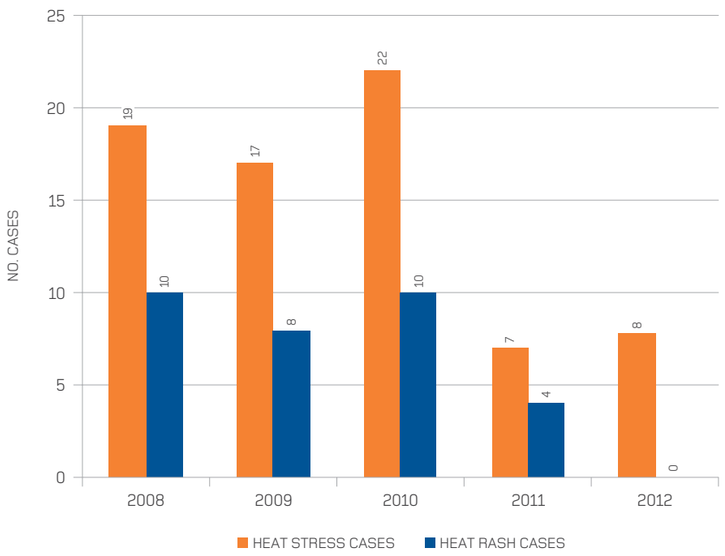


FIGURE 26: INCIDENCE OF HEAT-RELATED ILLNESSES, 2008 TO 2012



To improve the health of our employees and create greater awareness of health-related illnesses, the DMC continued a programme, started in 2009, to motivate employees to take personal ownership of their well-being. The programme involves informational workshops and sessions on avoiding sickness and controlling the risk factors leading to some of the most common chronic illnesses. Most activities coincide with regional and international events, such as World Diabetes Day, Anti-Tobacco Day and Breast Cancer Day. Overall, these events help educate attendees on these health issues and provided valuable information on both preventative measures and treatment modalities.

On an ongoing basis, DMC provides primary healthcare services to manage and treat acute and chronic medical conditions. These and other initiatives contributed to DUBAL being certified to the new OSHAS 18001:2007 Health and Safety Management System in 2012.

CASE STUDY

Beat the Heat and Be Safe

Ongoing and concerted initiatives to educate employees and empower them to take care of their occupational well-being underscores DUBAL's annual summer programme, which aims each year to reduce the number of lost working days due to heat rash and heat stress cases within our company's workforce. The success of the programme is such that, in the summer months of 2011, DUBAL recorded zero lost days as a result of either heat rash or heat stress – for the fifth and sixth consecutive years respectively.

Introduced in 2006 as "Beat the Heat", the core element of the programme is information sharing through awareness sessions and posters – the focus being on preventative activities such as acclimatization to the heat, regular hydration, monitoring personal hygiene, taking frequent breaks, and maintaining a healthy lifestyle; plus the importance of early reporting of any symptoms of potential heat-related illnesses. A total of 2,274 employees attended the awareness sessions in 2011, ensuring widespread personal empowerment. In addition to sustaining the zero lost working days record, the number of heat stress cases in 2011 declined by 70 per cent compared to 2010; while the number of heat rash cases dropped by 60 per cent.

Building on the success of prior years, the 2011 summer programme was extended to include a safety component and accordingly renamed "Beat the Heat and Be Safe". The extension was in keeping with the corporate aim to reduce the total recordable injuries at DUBAL; and followed an analysis of statistics over recent years which showed that the average number of injuries at DUBAL tended to be higher during summer months than in winter months. By encouraging behaviour changes to help employees cope with the weather-related changes to the work environment in summer, the number of recordable injuries over the four months from June to September 2011 reduced by 40 per cent compared to the same period in 2010. Eight heat stress cases and zero heat rash cases were recorded in 2012, compared to seven and four cases respectively in 2011. From a safety perspective, a 17 per cent decline in total injuries was recorded over the summer of 2012 (34 injuries) compared to 2011 (41 injuries).

A supplementary "Healthy and Safe Lifestyle" sub-campaign was also introduced in 2011 and 2012, to support and reinforce the "Beat the Heat and Be Safe" programme. As the name suggests, this component focused on maintaining a healthy lifestyle by following a healthy diet, exercising regularly, getting enough sleep and achieving a balance between work and home-life; the importance of hydrating regularly to avoid dehydration; monitoring personal health and hygiene; as well as the potential impact of higher ambient temperatures on an individual's ability to work safely and productively. In addition to information-sharing and awareness sessions, the sub-campaign also included a mini-marathon at DUBAL, which drew a field of more than 200 employees.

In addition, the programme's profile was heightened in both 2011 and 2012 by using a highly visual template for posters, presentation templates, emails, session invitations and other media used to communicate with our audience. This was boosted by frequent messages to all employees, distributed via SMS technology, comprising safety and occupational health hints for the hotter months of the year.

Recruiting, training and developing talent

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

To retain talented individuals, we are also committed to the career development of our employees. Our structured performance management and appraisal framework, used for all levels of staff, helps identify individual training needs. Every year, all employees develop individual performance agreements in which their objectives and competencies are recorded, so that their line manager can monitor their progress. A mid-year review ensures that the employee is making progress towards his or her goals; while an end-of-year review evaluates the individual's performance for merit increase and possible bonus, plus promotion on the basis of ability, talent and attitude. From the start of the Performance Management System, 100 per cent of our employees have completed Performance Agreements and Performance Reviews.

As in prior years, our company invested substantially throughout the reporting period in training and development initiatives designed to provide employees with the skills required to perform their tasks effectively, while facilitating personal growth. Ongoing investments in skills development and training resulted in 9.96 training days per UAE National employee in 2012, and 5.53 training days per employee on average over the same time-frame.

Extensive learning opportunities are offered to our employees, thereby increasing their knowledge, expertise and professionalism. Our Training and Development department co-ordinates a broad range of technical and competency development programmes as well as on-the-job training courses. Courses on environmental, health, safety, quality management and assurance are offered throughout the year as are classes that teach English.

The DUBAL Training Centre (DTC) is complemented by satellite training centres located throughout the plant. The DTC focuses on the delivery of our PEC programmes to UAE Nationals joining our company. These training courses equip UAE National high school graduates to become maintenance craftsmen and smelter, desalination plant and power station operators through a combination of classroom-based and on-the-job training. UAE Nationals may also avail our Summer Training Programme, Graduate Training Programme (GTP), and our Scholarship Programme that supports higher learning. Depending on their performance, trainees and graduates are offered employment at DUBAL. More than 50 per cent of our current UAE National employees were developed through these programmes. On average, 30 per cent of our employees at management level were originally recruited through the GTP.

Certified by the UK-based Institute of Leadership and Management (ILM), the DTC also offers structured, ILM-accredited management development programmes for first line supervisors and middle managers; and workshops designed to impart basic life coaching and effective communication skills. In 2012, DUBAL was awarded Centre of Excellence status by ILM for the second time. In addition, our senior management employees are given training opportunities at recognised international business schools including INSEAD in France, IMD in Switzerland and through Ashridge Business School, UK. Employees also have access to an Open Learning Unit that enables them to obtain qualifications in technical subjects while holding down full-time positions within the company; and diverse e-Learning opportunities.

Accelerated Development Pool Programmes are in place, which identify potential candidates for advancement and groom them for middle- and senior management roles. Individuals chosen for the Development Pool Programmes attend focused workshops and complete experiential learning, projects, cross-functional movers, short-term transfers and one-to-one coaching to develop leadership qualities and team-building skills. Different development pools are in place for the Smelter area, Casthouse and Power Station. In addition, a new programme for Marketing & Sales has been designed and developed; as has Future Leaders 2 for UAE National employees at pay grades 11 and 13. In the last quarter of 2012, a Coaching Clinic for Managers was launched, and well received.

Diversity and equal opportunity

As shown in Table 7, 3,566 of our full-time regular and fixed-term employees in 2012 were male and 236 female (compared to 3,615 and 227 respectively in 2011). The majority of our people (67.5 per cent) are in the 30-to 49-year-old age bracket.

The proportion of female employees increased to 6.2 per cent in 2012 (2011: 5.9 per cent), with a minor decrease in male representation, the trend reflecting the 2012 operational and manning requirements of DUBAL.

TABLE 7: EMPLOYEE DEMOGRAPHICS AT DUBAI (2010, 2011 AND 2012)

	December 2012	December 2011	December 2010
Full-time Employees [1]	3,802	3,842	3,979
Temporary Employees [1]	165	129	177
Category			
Senior Management [1]	76	79	78
Supervisory [1]	903	903	928
Non-supervisory [1]	2,823	2,860	2,973
Gender			
Female [1]	236	227	234
Male [1]	3,566	3,695	3,745
Age (in years)			
Up to 25	6.87%	6.86%	8.1%
26 to 29	16.0%	17.5%	19.4%
30 to 39	42.2%	42.47%	41.69%
40 to 49	25.3%	23.77%	21.6%
50 to 54	6.1%	5.7%	5.5%
55 to 59	3.3%	3.48%	3.4%
Above 60	0.03%	0.03%	0.05%

1 These figures include regular and fixed-term employees

CASE STUDY

Enhanced fire training

Responding to an identified need to train DUBAL's fire-fighters regarding the vast new array of crucial technology, thereby equipping them to respond to any emergency effectively, efficiently and safely with the best protection possible our Crisis & Business Continuity Management (CBCM), Assets Protection, and Loss Prevention departments have developed a comprehensive Fire Training Ground within our Jebel Ali site.

The much-needed facility comprises several structures:

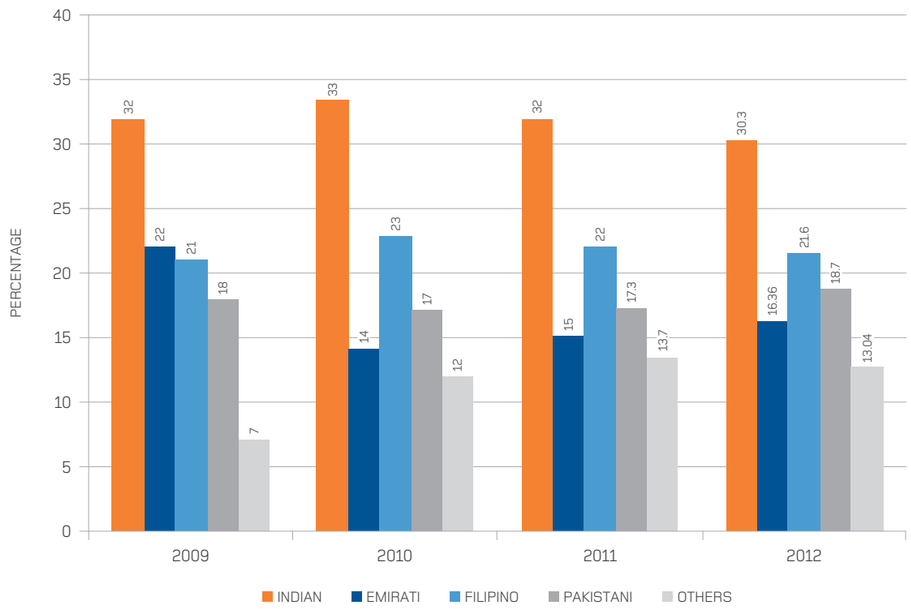
- A 1,500 square foot Firefighters Endurance testing centre, which is designed to determine if an employee has the strength and endurance needed to perform the job duties of a fire-fighter. This unprecedented, innovative and equitable physical ability test facility for fire-fighters is designed to help the fire department measure the physical ability of employees' to perform routine fire-fighting tasks.
- A 900 square foot High-tech Fire Simulator, an environmentally-friendly facility featuring state-of-the-art technology and resources to conduct hands-on instruction and exercises. Fire-fighters experience realistic training, including heat- and fire simulations.
- A 320 square foot 'L'-shaped Timber Fire structure, where, fire-fighters practice varied operational techniques including entry, search, ventilation and hose line operations.
- Individual Vehicle, Acetylene, Bulk Fuel Tank (BFT) Fire Simulators, which offer hot live fire training advantages. By design, they enable controlled and customized sizes of fire in different environments.
- A 1,430 square foot Fire Safety Learning Building, which consists of six rooms that offer the latest in audio-visual technology. It is designed to provide opportunities for DUBAL employees as well as fire-fighters to simulate fires in various occupational areas such as kitchen, office, and high voltage areas. The building also houses a sprinkler system test demo room and a smoke house to view the effects of smoke.

DUBAL's fire-fighters benefit from this enhanced facility, as do all DUBAL employees during in-service training. Effective training, such as offered by these facilities, develops the knowledge to make appropriate strategic and tactical decisions as well as proficiency in the skills necessary to mitigate or reduce hazards and provide a safer operating environment.

DUBAL is firmly committed to the Emiratization of our business, achieved through fostering local knowledge and talent. As mentioned on page 33, Emiratis comprised 16.36 per cent of our workforce at the end of 2012. The majority of our Emirati employees are male (81.6 per cent). Our Board and Executive Committee comprise 100 per cent male and 68.7 per cent UAE Nationals, respectively. Both structures are entirely male and the majority of members are aged 40- to 54-years-old.

As mentioned on page 33, each pay grade at DUBAL has a salary scale with a minimum and maximum level, which is applied without discrimination by gender. In terms of diversity, our employees hail from 40 different countries, with the majority originating from India, Philippines and Pakistan. The proportional breakdown changed for the three years under review is shown in Figure 27. The proportion of Indian employees declined due to a decrease in the number of Indian joiners and a coincident increase in the number of Indian nationals who left DUBAL's employ over the period. An opposite pattern was observe in employees from Pakistan, resulting in a proportional increase in this group.

FIGURE 27: DUBAL DEMOGRAPHICS BY MAJOR NATIONALITY GROUPS, 2009 TO 2012



CASE STUDY

Think Green, Act Green

Environment Week 2011 was marked by a "Think Green, Act Green" campaign which took place from 5 to 16 December. The campaign targeted DUBAL employees. The official opening, attended by our top management and guests from environmental organizations, was followed by an Eco-World exhibition and bazaar where more than 15 companies and organizations displayed and sold their goods. The concept behind the Eco-World was built around the objective of reducing the total waste sent to landfill by providing companies and processes that can recycle our waste – both solid waste and energy wastage.

The campaign also included a special screening of "Ocean Deep", exclusively for DUBAL, in collaboration with Emirates Diving Association. More than 200 employees and their families attended. In addition, 35 students from Winchester School attended the Eco-World exhibition and bazaar; toured DUBAL; and were exposed to videos and workshops to enhance their environmental awareness.

CASE STUDY

You CAN make a difference

As a corporate member of EEG and in line with our commitments to mitigate our impact on the natural world, DUBAL is a regular participant in the annual EEG Can Collection Campaign — an UAE-wide initiative that encourages recycling of aluminium drink cans.

Employees are asked to collect cans from their homes, friends and relatives and even restaurants, for the purposes of recycling. Information is shared on the purpose of the campaign through posters and articles in our in-house employee magazine (Imtiaz). In 2012, more than 32 collection bins are placed across our Jebel Ali site in convenient and readily accessible locations; and the campaign was extended by way of an inter-department "Can you take up the challenge?" competition, to collect the most cans. The response was most encouraging, as our employees collected 114 kg of empty aluminium cans!

Upholding human rights

We encourage sustainability performance among the stakeholders involved in our business, with particular emphasis on respecting human rights. DUBAL does not do business with any suppliers or business partners engaged in child labour, or forced/compulsory labour. All significant investment agreements at DUBAL include human rights clauses.

In our quest to uphold the principles of Responsible Supply Chain management are implemented at DUBAL, we encourage our suppliers to improve their environmental stewardship and social responsibility. Our sourcing policy reinforces this, as we only purchase materials and goods from organizations with a good environmental and social performance track record. Moreover, all suppliers to DUBAL are required to complete a Vendor Assessment Form. This ensures that appropriate quality assurance, environmental protection, waste management and occupational health and safety systems are in place in the supplier organization.

We strongly encourage all of our suppliers to obtain international certifications (ISO certification or an equivalent standard) for environmental and social standards. In the reporting period, almost 58.33 per cent of our Strategic Materials suppliers held one or more certification against an internationally recognized standard and 77.84 per cent of our expenditure (by volume) was procured from these suppliers.

We use a Material Assessment Form to ensure that our suppliers provide materials that are high quality, safe to handle and free of hazardous risks. All 144 of our active Strategic Materials suppliers adhere to our criteria for selection, based on our anti-child labour policy and material assessment. The electronic invoicing programme implemented in 2009 has increased the efficiency of our invoicing system. Suppliers submit invoices electronically, then track and check processing progress until the payment is released to their accounts.

A screening process is applied to all potential suppliers to assess their ability to meet our requirements under their self-reported Quality, Health, Safety and Environment systems. Our pre-approval audit process, conducted through a site visit and supplier assessment, gives suppliers recommendations on the measures required to comply with our sourcing policy. Specific human rights-related screening of suppliers and contractors is not conducted, but DUBAL's anti-child labour policy is clearly stated in our terms and conditions of doing business.

Cultural diversity and sensitivity

We are proud of the cultural and social diversity at DUBAL (see page 80) and have not received any reports of discrimination among our employees. During our induction process, employees are made aware of the different etiquettes, behaviours and attitudes of people coming from a wide range of cultural backgrounds. The history and traditions of Emirati society are also discussed and this helps expatriate employees settle in and learn more about their new professional environment.

We promote respect for human rights. As a measure of our commitment, our employees participate in development programmes that increase their own understanding of human rights, communication skills and cultural issues. Table 8 summarizes the courses offered to our employees in this area during the three-year review period, such training having amounted to 47 hours in total.

As mentioned on page 66, collective bargaining is not permitted under UAE law.

DUBAL is committed to providing all DUBAL employees – and those of other organizations working on our premises – a safe and secure work environment where no one is subject to unnecessary risk, harassment or discrimination. Indeed, personal harassment, including verbal, physical or sexual harassment of any employees, suppliers, temporary workers or providers of any kind is completely unacceptable. Nor will DUBAL tolerate any kind of discrimination based on race, colour, religion, nationality, sex, age, marital status, disability or other involuntary or personal characteristic. No incidents of discrimination were recorded during the reporting period.

The DUBAL smelter complex is located in Jebel Ali, Dubai. There are no indigenous people's territories contiguous or adjacent to our site.

TABLE 8: CULTURAL DIVERSITY TRAINING INITIATIVES (2010, 2011 AND 2012)

Year	Course / Programme Title	No. of courses held	Percentage employees trained
2010	The Challenges of Communication in a Multi-Cultural Environment - Middle Management Skills Workshop	5	0.19
	Communication in Multi-National Teams - DUBAL First Line Management Course Level III	1	0.03
	DUBAL Cultural Awareness - Induction Course - New course introduced in November 2008	9	1.00
2011	The Challenges of Communication in a Multi-Cultural Environment - Middle Management Skills Workshop	5	0.16
	Communication in Multi-National Teams - DUBAL First Line Management Course Level III	2	0.06
	DUBAL Cultural Awareness - Induction Course	5	0.83
	Jigsaw @ Work	4	0.06
2012	The Challenges of Communication in a Multi-Cultural Environment – Middle Management Skills Workshop	5	0.18
	Communication in Multi-National teams – DUBAL First Line Management Course Level III	2	0.05
	DUBAL Cultural Awareness – Induction Course	5	0.79
	Jigsaw @ Work	4	0.06

Responsibilities to society

We are aware that DUBAL's actions influence different parts of the community in different ways. We are also aware that our relationship with the community needs to be long-term, sustainable and mutually beneficial if our company is to successfully cohabit with the community and continue to make a positive contribution to the lives of the people with whom we interact. Our EMS includes programs and practices that assess and manage the impact of DUBAL's operations on the surrounding community.

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

- Economic: We support the economy through direct and indirect financial contributions, with associated benefits for the community.
- Social: We aim to improve living conditions and create opportunities for underprivileged and disadvantaged members of society.
- Environment: We strive to preserve precious natural resources and act responsibly so as to protect the environment.
- Workplace: We encourage individual development and diversity amongst employees. We encourage our employees to be socially responsible and proactively support socially responsible behaviour.

In many cases, we work with well-established and reputable partners such as educational institutes, non-governmental and community organizations, and other ethically responsible businesses to maximize our reach and impact. For example, DUBAL is a member of ENGAGE Dubai.

Corruption and corrupt practices, whether locally or internationally, no matter how small or indirect, will not be tolerated at DUBAL. A campaign to build a culture of compliance at DUBAL was held for all supervisory-level employees in November 2012; and was repeated for non-supervisory employees in February 2013. The campaign coincided with the release of the most recently updated version of DUBAL's Code of Conduct and the launch of Your Voice – the independent, third party-hosted whistle-blower reporting mechanism which made its debut in the third quarter of 2012. With this system in place, DUBAL will be able to measure and report on risks related to and incidences of corruption in the future.

Our Corporate Relations & International Affairs department plays a key role in building the relationship between DUBAL and the government of Dubai (our sole shareholder). Effort is also invested in maintaining open channels of communication with local and federal authorities and liaising with foreign embassies and lobbying on industry-related matters; and DUBAL regulary hosts and participates in trade mission visits. Working closely with the GAC, DUBAL plays an active role in lobbying authorities to remove the tariffs imposed on aluminium produced in the Gulf (notably in the European Union and China). DUBAL does not participate in political activity and does not make financial and in-kind contributions to political parties, politicians and related institutions.

DUBAL conducts rigorous, lawful competitor intelligence gathering. We use only available literature, industry and other publicly available sources to understand business, customer and supplier directions, technology trends, regulatory proposals and developments, and existing and expected costs of suppliers and competitors. No legal actions were taken during the reporting period for anticompetitive behaviour, anti-trust, and monopoly practices. DUBAL diligently complies with laws and regulations, such that no fines or sanctions were incurred due to noncompliance.

CASE STUDY

Break the Silence

Since 2009, DUBAL has supported Dubai Autism Centre (DAC) in several ways, including fund-raising, awareness campaigns and advocacy. In 2012 alone, our efforts raised AED 250,000 (US$ 67,935), including a direct cash injection from the company, targeted specifically at DAC's project to construct a newer, bigger and better treatment centre that can accommodate more children with autism in the UAE. Driven by the slogan "Their passion … our support", the three campaign elements comprised:

- A souk, held at DUBAL's Mosque Tent, whereby diverse vendors promoted their products at attractive prices and generously donated 10 per cent of their profits to DAC. More than 1,200 DUBAL employees visited the souk, several in the company of family members.
- A payroll deduction initiative, whereby DUBAL employees could voluntarily contribute an amount, deducted from their salary payment.
- A gala dinner that was attended by about 300 people. Several suppliers joined forces with DUBAL for the event by sponsoring tables at the dinner and/or sponsoring valuable items that were either auctioned or used as prizes in a raffle draw. All proceeds from the dinner went directly to DAC.

Involving our employees in DUBAL's CSR initiatives has considerable impact. Not only does it give them opportunities to channel their efforts in this area, but also adds value by enabling DUBAL to become more directly involved in the needs of the society, especially as many employees' family members also participate in our outreach activities. The approach highlights DUBAL's core brand value of caring to people outside our organization, and facilitates greater impact.

In previous years, our support for DAC has included helping to raise awareness of autism, raising funds, providing skills training and development opportunities to the center's administration personnel, rebuilding their warehouse and implementing a stock management system.

CASE STUDY

Celebrating national and international environment initiatives

National Environment Day 2012, commemorated under the patronage of His Highness Sheikh Khalifa bin Zayed Al Nahyan (President of the UAE) reflected the UAE's efforts to implement a development strategy that prioritizes the environment through the slogan 'Desert throbbing with life' from 2010 to 2012. Each year, the celebration of National Environment Day in the UAE embodies the prestige enjoyed by the desert in the minds of the people in this country and highlights the role the desert plays in the life of the people and the environment. DUBAL celebrates National Environment Day every year, and communicates environmental messages to all employees. In 2012, employees could also participate in a trip to the Jebel Ali Wildlife Reserve, managed by Emirates Marine Environmental Group.

DUBAL also celebrated World Environment Day (WED), which falls on 5 June every year. In keeping with the 2012 WED theme "Forests: Nature at Your Service" (aligned with the United Nations International Year of Forests), our activities focused on the company's environment-orientated projects — specifically the DUBAL Green Belt, which provides a vegetated buffer zone around the perimeter of the company's Jebel Ali site and is therefore a form of aforestation. A group of DUBAL employees and their families also visited the Emirates Marine Environmental Group's Ghantout reserve, where they participated in many activities such as mangrove planting, a beach clean-up and waste recycling.

Product responsibility

As mentioned under 'Products and services' on page 62, DUBAL's products are fully compliant with REACH regulations and Safety Data Sheets exist for all DUBAL products, in accordance with these regulations. Primary aluminium does not pose health and safety risks, such that our products and services are not subject to assessments for improvement. Continuous improvement is nevertheless integral to DUBAL's day-to-day operations and our strategy to differentiate our business and products on the basis of distinctive excellence. Our entire production is made-to-order, meeting exacting customer specifications (e.g. aluminium purity, alloy blends, etc.) and all products are fully labeled to reflect these attributes.

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

DUBAL conducts regular customer satisfaction surveys and audits each year. We respond to the feedback received quickly and effectively to change our product specifications according to requests. Our bi-annual customer satisfaction survey is instrumental in gauging the level of customer satisfaction and identifying areas for improvement in five key areas, namely: Product Quality; Packaging and Delivery; Shipping; Documentation; and Customer Service. The results of our customer satisfaction surveys confirm the high level of confidence that our customers have in the quality of our product. The 2010 survey results indicated a high level of customer satisfaction, with the majority of customers rating DUBAL's products as superior or very superior; and DUBAL's delivery performance as good, very good or excellent.

We acknowledge that maintaining the highest standards of integrity, honesty and business ethics are critical to our long-term viability and success as a global business. Accordingly, all of our marketing and sales communications (as with all other communications) is grounded in equity, honesty and cultural sensitivity. As a business-to-business entity, DUBAL does not manufacture consumer products. Accordingly, our advertising tends to be of a corporate nature (themed by focus/topic), rather than specific to products (our entire annual production is made to order). No incidents of non-compliance with regulations and voluntary codes in marketing communications have occurred, either during the review period or DUBAL's 33-year history.

DUBAL is certified to ISO:IEC 27001:2005 Information Security Management System. This assures our customers of the highest levels of data confidentiality, and data protection. DUBAL has not had any complaints regarding breaches of our customer's privacy or losses of customer data during the reporting period. No incidents of non-compliance with regulations and voluntary codes have occurred, and no monetary fines have been levied as a result of non-compliance with laws and regulations concerning the provision and use of products and services.

CASE STUDY

Educating the community

To DUBAL a fundamental tenet of meaningful corporate social responsibility entails improving living conditions and creating opportunities for underprivileged and disadvantaged members of society. With these aims in mind, we engaged in various educational programmes in during 2011 and 2012, all of which equipped the participants to participate more actively in the community and improve their quality of life.

Business skills training through Dar Al Ber Society
DUBAL teamed up with Dubai-based Dar Al Ber Society for a pilot project to educate women in various business skills, help them be competitive within the market and give them an opportunity to start a career. A group of 15 women from different nationalities, all living in the UAE and registered at Dar Al Ber Society, were chosen to participate. The project, which took place from 11 December 2011 until 26 January 2012, entailed the women attending courses each week-day. The women were trained in business communication, electronic archiving, computer skills and typing (Arabic as well as English), thus giving them the chance to enter the professional arena.

While DUBAL fully sponsored the women and assigned two Arabic teachers to assist the women, Dar Al Ber Society provided transportation to ensure attendance. Being ranked first in Forbes Middle East's list of most transparent charitable societies and organisations in the Arab world, Dar Al Ber Society turned out to be an excellent partner for DUBAL, making this project another impactful initiative in the company's corporate social responsibility portfolio. Based on the success of the project, Dar Al Ber Society now plans to roll-out the concept on a larger scale by involving other corporate organisations as sponsors.

Improving English competency through Action Care
Next, DUBAL partnered Action Care for "English Live" – an English language and communication skills programme – at Qurtoba Adult Education School from 15 to 19 April 2012. Action Care is a UAE-based organization that provides humanitarian assistance, and conducts diverse educational development programs within the UAE and GCC with the aim of enhancing the quality of life for everyone in the community. The "English Live" programme at Quortoba Adult Education School reached 45 female students from different educational background and aged between 20- and 40-years-old.

Qurtoba Adult Education School ran the "English Live" programme as part of its efforts to eliminate illiteracy among UAE Nationals. Particular attention was focused on women who had not completed their schooling. Through Qurtooba Adult Education School, these women can study again – a wonderful opportunity given that many of them cannot attend government schools as they are housewives or employed in different sectors (e.g. immigration, police and the municipality). In addition to sponsoring the programme, bilingual female volunteers from DUBAL played a vital support role in the programme. This allowed the DUBAL ladies to interact and bond with women from the community.

According to a letter from Action Care, the "English Live" programme was received enthusiastically by the students, teachers and school administration. Moreover, the students commented on how the programme had helped build their confidence in speaking English; and that the skills learnt — such as team working, communications and role-play exercises — would help them in their studies, present jobs and the future.

Building capacity in charitable organisations
As part of DUBAL's extended support to Dubai Autism Center (DAC), members of DAC's administration staff are being hosted at various courses offered through DUBAL Training Center. The line-up of course options includes "7 Habits for Highly Effective People", "Team-building", "Presentation Skills"," Improving Customer Service", and so on. A few staff from DAC are hosted each month, with individuals being nominated to attend specific courses, depending on their job responsibilities and needs in order to serve DAC properly.

Equipping parents to prevent child injury
DUBAL partnered with Back to Basics, a Dubai-based community training provider for child injury prevention and paediatric first aid, to equip parents with the knowledge to prevent an accident, and how to respond with best practice in pediatric first aid should an accident occur. Primarily targeting new parents and home help, so as to develop a safety culture and address the alarmingly high rate of infant and child fatalities in the UAE, the workshop-based training has been created to meet local needs and this is the first community programme of its kind in the region. The Back to Basics programme is endorsed and supported by Dubai Health Authority, Dubai Corporation for Ambulance Services and Health Authority Abu Dhabi.

DUBAL sponsored a series of Back to Basics workshops in June 2012, attended by more than 150 people. Delivered in both Arabic and English, the programme is offered free-of-charge to new or expecting parents. Every participant received a Pediatric First Aid book and a certificate on completion. One workshop was held at Qurtoba Adult Education School, and a series of workshops took place at Latifa Hospital during the course of the month. In addition, DUBAL hosted a Back to Basics workshop at our Jebel Ali site on 30 June 2012, with participation offered exclusively to employees, their spouses and children (older than 12). The topics on the agenda include recognizing the need to take action; creating a safer home; empowering home help; creating a safety culture for your children; responding when an injury occurs; and dealing with emergency services.

Key statistics

DUBAL's main objectives are to deliver high quality value-added products in a consistent and sustainable manner to our customers; and to generate acceptable returns to our share holder. Honestly, accuracy and transparency are among our fundamental tenets, reflected in the submission of our financial records to official auditing processes; as well as our commitments to publishing our sustainability performance statistics using the widely accepted GRI Guidelines to ensure intra- and inter-industry comparability.

Key indicators

- Re-stated from 2008/2009 Sustainability Report
- KPI and / unit revised

	Unit	2004	2005		2006	2007	2008	2009	2010	2011	2012
Final product											
Metal sold	tonne	727,152	851,806		906,547	911,554	924,308	1,001,257	1,015,520	1,032,545	1,052,419
Gross metal cast	tonne				851,718	943,997	947,507	1,009,773	1,043,104	1,055,310	1,061,020
External water sales (blended & unblended)	Ml	8,818	29,355		38,126	29,289	27,640	20,476	20,886	26,994	26,736
External electricity sales (including Oasis)	MWh	123,925	140,046		178,470	192,539	189,944	135,140	121,676	90,989	79,433
Markets by geography											
Asia	%	51	51		43	36	37	42	37	37	39
Europe	%	20	20		28	30	26	16	20	22	20
The Americas	%	7	7		9	18	9	5	8	13	15
Middle East and North Africa (MENA)	%	22	22		20	16	28	37	35	28	26
Profit											
Compound annual revenue growth rate	Average % (from 1995)					13.5	13.2	10.3	11.0	12.0	10.4
Compound annual profit growth rate	Average % (from 1995)					20.0	9.5	3.3	7.9	10.8	5.1
Compound annual cash from operating activities	Average % (from 1995)										
Expenditure distribution											
Dubai	million AED					1,902	2,225	1,892	2,196	2,176	2,209
UAE (other than Dubai)	million AED					111	96	106	206	210	182
GCC (other than UAE)	million AED					79	192	193	111	179	187
Middle East (other than GCC)	million AED					34	41	18	16	28	31
Total purchase from regional suppliers	million AED					2,126	2,554	2,208	2,529	2,593	2,609
Land use											
Total area disturbed	Hectare	475	475		475	475	475	475	475	475	475

	Unit	2004	2005		2006	2007	2008	2009	2010	2011	2012
Raw materials											
Alumina	tonne	1,385,471	1,413,662		1,518,122	1,712,710	1,707,430	1,855,154	1,906,034	1,952,481	1,976,570
Petroleum Coke	tonne	235,895	280,055		266,861	307,023	296,446	293,904	304,243	300,118	311,912
Pitch	tonne	71,025	56,773		60,516	69,535	69,899	69,196	72,829	71,640	72,784
Alumina trifluoride	tonne	9,872	8,841		11,896	13,865	13,010	13,410	15,945	16,343	16,899
Purchased anodes	tonne	-	-		38,063	78,690	114,978	82,790	85,037	76,523	77,053
Natural gas	GJ	109,798,247	106,443,033		101,839,260	119,429,147	128,072,884	147,701,140	154,090,299	153,214,391	151,628,109
Distillate	GJ	41,687	6,275,564		23,011,113	18,087,358	762,193	173,330	751,695	238,022	187,128
Energy consumption											
External purchased electricity	MWh	51,506	25,988		124,551	26,385	65,272	50,754	37,054	31.608	27,414
Average DUBAL generation	MW	1,234	1,348		1,448	1,630	1,655	1,770	1,857	1,863	1,872
Average electrical load *(Note 1)*	MW	1,226	1,335		1,442	1,612	1,641	1,761	1,847	1,856	1,866
Natural gas	GJ/t Al	161.2	147.4		129.4	135.7	143.6	154.6	153.2	151.0	147.9
Distillate	GJ/t Al	0.12	8.74		29.30	20.31	0.85	0.19	0.75	0.23	0.18
Anode consumption	GJ/t Al	15.08	15.47		15.82	16.80	17.7	15.32	15.17	14.56	14.85
Packing coke and volatiles (Baking Kilns)	GJ/t Al	1.67	1.51		1.33	1.26	1.74	1.16	1.11	1.12	1.14
Total	GJ/t Al	178	173		176	174	164	171	170	166	164
Water consumption											
Total site water consumption	m^3/tonne Al	-	-		-	-	-	3,716,363.64	4,364,024.02	4,496,770.00	3,873,491.26
Blended water (excluding Desalination)	m^3/tonne Al	-	-		-	-	-	-	2,877,867.505	2670567.55	2417799.597
Unblended water (excluding Desalination)	m^3/tonne Al	238,979	36,025,583		131,456,651	103,596,644	4,107,419	665,941	1,316,251	1,630,689	1,393,471
Desalination consumption (sea water)	1,000,000 m^3	196	239		294	248	290	234	197	224	198
Discharge to the sea	1,000,000 m^3	Not Available	Not Available		Not Available	965,685	1,186,109,110	1,030,487,710	1,146,202,200	1,179,534,000	1,118,141,712
Emission											
Greenhouse Gas Emissions											
Electricity generation	tonne CO_2eq	5,468,703	5,700,880		6,6546,589	7,264,941	7,088,929	7,574,451	7,722,539	7,551,037	7,462,363
Anode consumption	tonne CO_2eq	1,048,792	1,112,719		1,227,176	1,369,130	1,383,908	1,488,632	1,556,524	1,576,834	1,594,880
Perfluorocarbons	tonne CO_2eq	177,069	252,891		247,497	210,504	339,415	290,845	263.328	131,030	123,729
Others	tonne CO_2eq	231,552	245,665		254,044	272,446	316,643	273,091	263,497	263,138	265,075
Total	tonne CO_2eq	6,926,116	7,312,155		8,385,306	9,117,021	9,128,894	9,627,019	9,805,886	9,522,039	9,446,048

	Unit	2004	2005		2006	2007	2008	2009	2010	2011	2012
Emission											
Other Gaseous Emissions											
Oxides of Sulphur	tonne	11,578	12,139		14,686	15,840	15,581	16,679	16,507	14,909	15,496
Oxides of Nitrogen	tonne	14,322	14,444		21,655	16,859	12,048	12,230	14,806	12,707	11,718
Fluoride	tonne	484	470		522	540	531	561	628	558	612
Waste											
Solid waste to landfill											
Spent potlining (SPL)	kg/tonne Al	11.37	18.72		6.03	6.37	16.22	19.86	10.23	6.10	0.00
Other hazardous (excluding SPL)	kg/tonne Al	5.95	4.01		4.27	7.28	3.77	3.58	5.32	3.55	2.96
General waste	kg/tonne Al	22.40	21.40		20.07	19.53	19.64	18.68	17.40	17.97	17.21
Total solid waste to landfill	kg/tonne Al	39.72	44.13		37.71	42.81	44.31	46.59	38.81	33.18	27.19
Hazardous liquid waste	tonne	1,559	1,698		1,205	1,153	1,181	1,438	1,719	1,389	1,570
Non-hazardous	tonne	11,276	10,348		10,573	12,300	13,017	13,412	13,231	14,423	11,986
Total waste generated (excluding anodes recycled)	tonne	12,875	12,090		37,028	43,199	48,801	54,637	51,909	56,046	50,150
Total waste disposed	tonne	26,920	31,922		30,868	39,144	40,694	45,948	40,607	35,062	28,764
Water recycled from sewage	%	96.7	97.6		97.5	92.0	89.7	88.6	66.0	63.0	65.0
Recycled water from sewage	Ml	425	414		467	537	419	301	534	578	508
Human capital											
HSE expenditure	million AED					262.59	324.98	326.98	22,468	412,047	49,781
Community investment											
Education & training	thousand AED				600	1,790	1,894	612	667	767	842
Sport	thousand AED				2,000	2,450	3,363	2,487	18,659	18,243	18,900
Environment	thousand AED				25	60	560	65	217	1,230	1,386
Donations	thousand AED				175	500	1,136	879	619	2,254	671
Total investment *(Note 2)*	thousand AED				2,800	4,800	6,955	4,043	20,162	22,494	21,799

	Unit	2004	2005		2006	2007	2008	2009	2010	2011	2012
Employment											
Total number of full-time employees		3,023	3,182		3,569	3,747	4,261	3,933	3,979	3,842	3,803
Total number of expats employed		2,382	2,474		2,768	2,904	3,386	3,103	3,415	3,258	3,188
Total number of nationals employed		641	708		801	843	875	830	564	584	615
Total number of women employed		120	147		175	208	211	224	234	227	236
Employee attrition rate	%	10.0	8.8		7.3	6.9	7.2	9.4	5.4	6.5	6.9
Training											
Training cost	million AED	4.41	7.85		10.43	11.93	15.16	8.85	12.43	11.01	8.32
Training man-days per employee	man-days	2.76	4.17		3.96	2.92	5.80	5.00	4.19	4.20	3.85
Health											
Cases of heat stress		19	16		12	23	19	17	22	7	8
Heat stress lost working days		7	7		0	0	0	0	0	0	0
Cases of heat rash		141	77		76	31	10	8	10	4	0
Heat rash lost working days		111	13		5	0	0	0	0	0	0
Safety											
Lost time incidents (LTIs)		16	9		12	2	3	3	2	1	2
LTI lost working days		360	641		473	64	121	55	228	22	220
Number of fatalities		0	0		0	2	0	0	0	0	0
LTIFR		2.31	1.21		1.44	0.23	0.33	0.31	0.22	0.11	0.22
TRIFR		13.07	10.15		11.65	6.30	5.65	4.27	4.21	3.65	3.26
Power Plant key indicators *(Note 3)*											
MWh generated	MWh	10,989,021	11,777,017		12,647,071	14,365,053	14,543,785	15,511,584	16,267,555	16,321,481	16,444,837
Efficiency *(Note 2)*	%	40.9	42.8		41.4	42.3	43.3	43.0	42.9	43.5	44
Total fuel energy (Gas & Distillate)	GJ/MWh	10.00	9.57		9.87	9.57	8.99	9.53	9.48	9.32	9.17
Compressed air	Nm^3	506,735,712	572,656,896		621,703,488	630,967,296	670,701,481	715,294,750	761190647	794825088	822,809,707

	Unit	2004	2005		2006	2007	2008	2009	2010	2011	2012
Desalination Plant key indicators											
Water production (actual)	MI	13,372	33,130		42,070	34,657	31,379	24,481	24,405	30,474	29,656
Sea water consumption for Desalination	MI	195,818	239,295		293,835	248,033	289,613	233,888	197,389	224,484	198,229
Steam	tonne/MW	10.1	11.2		10.7	10.4	14.5	11.1	11.9	11.0	10.3
Smelter key indicators											
Production by potlines	tonne	681,033	722,540		786,592	894,322	891,723	955,404	1,002,014	1,014,794	1,025,266
Final product (including alloys)	tonne	753,699	850,682		912,621	934,038	934,494	1,002,575	1,027,056	1,044,413	1,053,811
Electrolysis energy	DC MWh /t Al	14.3	14.5		14.4	14.3	14.6	14.7	14.8	14.7	14.7
Current efficiency	%	95.1	95.1		95.2	95.0	94.4	93.8		94.6	94.1

Note 1: Average electrical load = total generation – (export to DEWA + Gulf Extrusion load + DUGAS load)
Note 2: Community investment includes the Dubai Desert Classic and the Dubai International Horse Racing Carnival (2010 to 2012 figures)
Note 3: Efficiency is at a reference temperature of 38°C

GRI Index

LEGEND: F - Fulfilled; N - Not Fulfilled; P - Partially Fulfilled; N/A - Not Applicable to DUBAL

CATEGORIES	INDICATORS		PAGE	EXTENT OF REPORTING
STRATEGY & ANALYSIS	1.1	CEO's Statement	6 to 11	F
	1.2	Key Impacts, Risks and Opportunities	7	F
ORGANISATIONAL PROFILE	2.1	Name of the Organization	4	F
	2.2	Primary Brands, Products and/or Services	13	F
	2.3	Operational structure of the organization, including main divisions, operating companies, subsidiaries, and joint ventures.	13	F
	2.4	Location of Organization's Headquarters	13	F
	2.5	Number of countries where the organization operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report.	13	F
	2.6	Nature of Ownership and Legal Form	13	F
	2.7	Markets served (including geographic breakdown, sectors served, and types of customers/beneficiaries).	13 & 14	F
	2.8	Scale of the Reporting Organization	13	F
	2.9	Significant changes during the reporting period regarding size, structure, or ownership	13	F
REPORT PARAMETERS	3.1	Reporting Period	17	F
	3.2	Date of most recent previous report	17	F
	3.3	Reporting Cycle	17	F
	3.4	Contact point for questions regarding the report and its content	1Fc	F
	3.5	Process for defining report content	17	F
	3.6	Boundary of the report (e.g., countries, divisions, subsidiaries, leased facilities, joint ventures, suppliers).	17	F
	3.7	Limitations on the scope or boundary of the report.	17	F
	3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability from period to period and/or between organizations.	17	F
	3.9	Data measurement techniques and the bases of calculations, including assumptions and techniques underlying estimations applied to the compilation of the indicators and other information in the report.	–	N
	3.10	Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement (e.g. mergers/acquisitions, change of base years/periods, nature of business, measurement methods).	17 & 18	F
	3.11	Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report.	17 & 18	F
	3.12	Table identifying the location of the Standard Disclosures in the report.	103 to 112	F
	3.13	Policy and current practice with regard to seeking external assurance for the report. If not included in the assurance report accompanying the Sustainability Report, explain the scope and basis of any external assurance provided. Also explain the relationship between the reporting organization and the assurance provider(s).	17 & 18	F
GOVERNANCE, COMMITMENTS AND ENGAGEMENT	4.1	Governance structure of the organization, including committees under the highest governance body responsible for specific tasks, such as setting strategy or organizational oversight.	19 & 20	F
	4.2	Indicate whether the Chair of the highest governance body is also an executive officer	19	F

CATEGORIES	INDICATORS		PAGE	EXTENT OF REPORTING
GOVERNANCE, COMMITMENTS AND ENGAGEMENT	4.3	For organizations that have a unitary board structure, state the number of members of the highest governance body that are independent and/or non-executive members.	19	F
	4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body.	24 to 26	F
	4.5	Linkage between compensation for members of the highest governance body, senior managers, and executives (including departure arrangements), and the organization's performance (including social and environmental performance).	19	P
	4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided.	-	N
	4.7	Process for determining the qualifications and expertise of the members of the highest governance body for guiding the organization's strategy on economic, environmental, and social topics.	-	N
	4.8	Internally developed statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance and the status of their implementation.	6	F
	4.9	Procedures of the highest governance body for overseeing the organization's identification and management of economic, environmental, and social performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles.	19 to 22	F
	4.10	Processes for evaluating the highest governance body's own performance, particularly with respect to economic, environmental, and social performance.	-	N
	4.11	Explanation of whether and how the precautionary approach or principle is addressed by the organization.	19, 23	F
	4.12	Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses.	23	F
	4.13	Memberships in associations (such as industry associations) and/or national/international advocacy organizations.	23	F

CATEGORIES	INDICATORS		PAGE	EXTENT OF REPORTING
GOVERNANCE, COMMITMENTS AND ENGAGEMENT	4.14	List of stakeholder groups engaged by the organization.	24	F
	4.15	Basis for identification and selection of stakeholders with whom to engage.	24	F
	4.16	Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group.	24 to 26	F
	4.17	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting.	24 to 26	P
ECONOMIC	EC1	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.	29 & 30	P
	EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change.	29 & 30	F
	EC3	Coverage of the organization's defined benefit plan obligations.	30	F
	EC4	Significant financial assistance received from government.	30	F
	EC5	Range of ratios of standard entry level wage compared to local minimum wage at significant locations of operation.	33	F
	EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation.	34	F
	EC7	Procedures for local hiring and proportion of senior management hired from the local community at locations of significant operation.	33	F
	EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement.	34	F
	EC9	Understanding and describing significant indirect economic impacts, including the extent of impacts.	34	F

CATEGORIES	INDICATORS		PAGE	EXTENT OF REPORTING
ENVIRONMENTAL	EN1	Materials used by weight or volume.	38 & 39	F
	EN2	Percentage of materials used that are recycled input materials.	58	F
	EN3	Direct energy consumption by primary energy source.	40 to 43	F
	EN4	Indirect energy consumption by primary source.	45	F
	EN5	Energy saved due to conservation and efficiency improvements.	8, 46	F
	EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives.	40 to 47	F
	EN7	Initiatives to reduce indirect energy consumption and reductions achieved.	40 to 47	F
	EN8	Total water withdrawal by source.	48	F
	EN9	Water sources significantly affected by withdrawal of water.	48	F
	EN10	Percentage and total volume of water recycled and reused.	46 & 47	F
	EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.	51	F
	EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.	51 to 53	F
	EN13	Habitats protected or restored.	51 to 53	F
	EN14	Strategies, current actions, and future plans for managing impacts on biodiversity.	51	F
	EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.	51	
	MM1	Amount of land (owned or leased, and managed for production activities or extractive use) disturbed or rehabilitated.	-	N/A
	MM2	The number and percentage of total sites identified as requiring biodiversity management plans according to stated criteria, and the number (percentage) of those sites with plans in place.	-	N/A
	EN16	Total direct and indirect greenhouse gas emissions by weight.	55 & 57	F
	EN17	Other relevant indirect greenhouse gas emissions by weight.	55 & 57	F
	EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved.	55 & 57	F
	EN19	Emissions of ozone-depleting substances by weight.	53 & 55	F
	EN20	NO, SO, and other significant air emissions by type and weight.	53 to 55	F
	EN21	Total water discharge by quality and destination.	48 & 49, 58	F
	EN22	Total weight of waste by type and disposal method.	58	F
	EN23	Total number and volume of significant spills.	58	F
	EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.	59	P
	EN25	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.	58	F
	MM3	Total amounts of overburden, rock, tailings, and sludges presenting potential hazards.	-	N/A
	EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.	62	F
	EN27	Percentage of products sold and their packaging materials that are reclaimed by category.	-	N/A
	EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.	62	F

CATEGORIES	INDICATORS		PAGE	EXTENT OF REPORTING
ENVIRONMENTAL	EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.	-	N
	EN30	Total environmental protection expenditures and investments by type.	36 to 61, 97 & 98	F
LABOUR PRACTICES AND DECENT WORK	LA1	Total workforce by employment type, employment contract, and region.	65 & 66	F
	LA2	Total number and rate of employee turnover by age group, gender, and region.	65 & 66	F
	LA3	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations.	65	F
	LA4	Percentage of employees covered by collective bargaining agreements.	66 & 83	F
	LA5	Minimum notice period(s) regarding operational changes, including whether it is specified in collective agreements.	66	P*
	MM4	Number of strikes and lockouts exceeding one week's duration, by country.	–	N/A
	LA6	Percentage of total workforce represented in formal joint management–worker health and safety committees that help monitor and advise on occupational health and safety programs.	70 & 83	F
	LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region.	72	P**
	LA8	Education, training, counselling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases.	74 & 75	P
	LA9	Health and safety topics covered in formal agreements with trade unions.	-	N/A
	LA10	Average hours of training per year per employee by employee category.	77	P
LABOUR PRACTICES AND DECENT WORK	LA11	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.	77	F
	LA12	Percentage of employees receiving regular performance and career development reviews.	77	F
	LA13	Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership, and other indicators of diversity.	78 & 80	F
	LA14	Ratio of basic salary of men to women by employee category.	80	F
HUMAN RIGHTS	HR1	Percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights screening.	83	F
	HR2	Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken.	83	F
	HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.	83 & 84	F
	HR4	Total number of incidents of discrimination and actions taken.	83	F
	HR5	Operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk, and actions taken to support these rights.	-	N/A
	HR6	Operations identified as having significant risk for incidents of child labour, and measures taken to contribute to the elimination of child labour.	67 & 83	F
	HR7	Operations identified as having significant risk for incidents of forced or compulsory labour, and measures to contribute to the elimination of forced or compulsory labour.	67 & 83	F
	HR8	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations.	-	N

* The notice period depends on the nature of an employee's role.
** Rates for some cases have not been included – this is because the number of total days worked (for full-time and shift employees) have not been provided

CATEGORIES	INDICATORS		PAGE	EXTENT OF REPORTING
HUMAN RIGHTS	HR9	Total number of incidents of violations involving rights of indigenous people and actions taken.	-	N/A
	MM5	Total number of operations taking place in or adjacent to Indigenous Peoples' territories, and number and percentage of operations or sites where there are formal agreements with Indigenous Peoples' communities.	-	N/A
SOCIETY	SO1	Nature, scope, and effectiveness of any programs and practices that assess and manage the impacts of operations on communities, including entering, operating, and exiting.	-	N
	MM6	Number and description of significant disputes relating to land use, customary rights of local communities and indigenous peoples.	-	N/A
	MM7	The extent to which grievance mechanisms were used to resolve disputes relating to land use, customary rights of local communities and indigenous peoples, and their outcomes.	-	N/A
	SO2	Percentage and total number of business units analyzed for risks related to corruption.	19	F
	SO3	Percentage of employees trained in organization's anti-corruption policies and procedures.	19 & 85	F
	SO4	Actions taken in response to incidents of corruption.	19	F
	SO5	Public policy positions and participation in public policy development and lobbying.	85	F
	SO6	Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country.	85	F
	SO7	Total number of legal actions for anticompetitive behaviour, anti-trust, and monopoly practices and their outcomes.	85	F
	SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations.	85	F
	MM8	Number (and percentage) of company operating sites where artisanal and small-scale mining (ASM) takes place on, or adjacent to, the site; describe the associated risks and the actions taken to manage and mitigate these risks.	-	N/A

CATEGORIES	INDICATORS		PAGE	EXTENT OF REPORTING
SOCIETY	MM9	List sites where resettlements took place, the number of households resettled in each, and how their livelihoods were affected in the process.	-	N/A
	MM10	Number and percentage of operations with closure plans.	-	N/A
PRODUCT RESPONSIBILITY	PR1	Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures.	88	F
	PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services during their life cycle, by type of outcomes.	88	F
	PR3	Type of product and service information required by procedures and percentage of significant products and services subject to such information requirements.	88	F
	PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labelling, by type of outcomes.	88	F
	PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction.	88	F
	PR6	Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship.	88	F
	PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship by type of outcomes.	88	F
	PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.	88	F
	PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services.	88	F
	MM11	Programmes and progress relating to materials stewardship.	-	N

Glossary

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

Term	Definition
Health Surveillance Programmes	Health and safety programmes designed to prevent illness. DUBAL's is used to monitor employee health and educate them about health risks.
Indirect Emissions	Emissions from sources generally outside the boundary of an organization. These emissions are mainly associated with waste disposed off-site, as well as the generation of imported electricity (not generated on site), heat, steam, gas and the production and distribution of petroleum products.
International Aluminium Institute (IAI)	A global forum of the world's aluminium producers. The Institute has 27 member companies and they are represented on the IAI Board of Directors by their CEOs. Together the IAI Member Companies represent more than 80 per cent of the world's primary aluminium production.
National Emiratization Policy	A UAE Government policy aimed towards increasing the number of national employees in the private sector.
Non-governmental Organizations	A legally constituted entity created by natural or legal persons with no participation or representation of any government.
Non-strategic Suppliers	Suppliers that provide DUBAL with everything other than raw materials.
Non-supervisory Employees	Employees who belong in grades 5 – 9 and are mainly involved in the production process at DUBAL.
Particulate Matter	Tiny subdivisions of solid or liquid matter suspended in a gas or liquid. Sources of particulate matter can be man made or natural.
Persistent Organic Pollutants	Organic compounds which are resistant to environmental degradation through chemical, biological, and photolytic processes. Because of this, they have been observed to persist in the environment, and can have potentially significant impacts on human health and the environment.
Specific Energy	Power consumed to produce one kilogram of hot metal.
Strategic Suppliers	Suppliers that provide DUBAL with key raw materials used in the production of aluminium.
Supervisory Employees	Employees in grades 11 – 17 who mainly hold supervisory roles.
Thermal Efficiency	The measure of the efficiency and completeness of combustion of the fuel, or the percentage of heat energy that is transformed into work.
Triple C Campaign	The set of measures taken by DUBAL during the economic downturn to improve on cash generation, cash conservation and cost reduction.

Acronyms & abbreviations

ACN	Arabian Computer News
AE	Anode Effect
AED	Arab Emirates Dirham
AFR	Alternative Fuel and Raw Material
Al	Aluminium
Alba	Aluminium Bahrain
AlF_3	Alumina trifluoride (also given as ATF)
BCP	Business Continuity Plan
BE	Business Excellence
BFT	Bulk Fuel Tank
BSC	Balanced Scorecard
°C	Degree Celsius
CAL	Cameroon Alumina Limited
CAP	Companhia de Alumina do Pará
CBCM	Crisis & Business Continuity Management
CCPP	Combined Cycle Power Plant
CDM	Clean Development Mechanism
CEMS	Continuous Emissions Monitoring System
CEO	Chief Executive Officer
CF_4	Tetrafluoromethane
C_2F_6	Hexafluoroethane
CFC	Chlorofluorocarbon
CII	Continual Improvement and Innovation
CIO	Chief Information Officer
CIPS	Chartered Institute of Purchasing & Supply
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2eq	Carbon dioxide equivalent
CSR	Corporate Social Responsibility
DAC	Dubai Autism Center
DC	Direct Current
DEWA	Dubai Electricity and Water Authority
DIES	Dubai Integrated Energy Strategy
DMC	DUBAL Medical Centre
DQG	Dubai Quality Group
DSCE	Dubai Supreme Council of Energy
DTC	DUBAL Training Centre
DUBAL	Dubai Aluminium
DUSUP	Dubai Supply Authority
ECBCM	Emergency Crisis Business Continuity Management
ECG	Electro-cardiogram
EEG	Emirates Environment Group
EHS	Environment, Health & Safety
EIA	Environmental Impact Assessment
EMAL	Emirates Aluminium Company Limited PJSC
EMS	Environmental Management System
ERM	Enterprise-wide Risk Management
F	Fluoride
FIFR	Fatal Injury Frequency Rate (per million man-hours)
GAC	Guinea Alumina Corporation
GAC	Gulf Aluminium Council
GCC	Gulf Co-operative Council
GDP	Gross Domestic Product
GJ	Gigajoule
GHG	Greenhouse Gas
GRI	Global Reporting Initiative
GTP	Graduate Trainee Programme
HF	Hydrogen fluoride
HR	Human Resources
HRSG	Heat Recovery Steam Generator
HV	High Voltage
IAI	International Aluminium Institute
ICD	Investment Corporation of Dubai
ICT	Information and Communications Technology
ILM	Institute of Leadership and Management
IP	Intellectual Property
IPCC	Intergovernmental Panel for Climate Change
ISO	International Organization for Standardization
IT	Information Technology
IUCN	International Union for Conservation of Nature
kA	Kilo-Amperes
kg	Kilogram
kg/t	Kilograms per tonne
km	Kilometre
km^2	Kilometres squared
kWh	Kilowatt hours
kWh/kg	Kilowatt hours per kilogram
LED	Light Emitting Diode
LME	London Metal Exchange
LOA	Levels of Authority
LSS	Lean Six Sigma
LTI	Lost Time Injury
LTIFR	Lost Time Injury Frequency Rate (per million man-hours)
m^3	Metres cubed
MENA	Middle East North Africa
MIG/day	Million Imperial Gallons per Day (also given as MIGD)
mscfd	Million Standard Cubic Feet per Day
MW	Megawatt
MWh	Megawatt hours
MWh/t	Megawatt hours per tonne
NOx	Oxides of nitrogen
OHH	Occupational Health and Hygiene
OHS	Occupational Health Surveillance
OSHAS	Occupational Safety and Health Administration System
PEC	Pre-employment Course
PEER	Positively Engaging Employee Risk
PFC	Perfluorocarbon
PM	Particulate Matter
REACH	European Union Regulation on Chemicals and their Safe Use
SAP	Systems Applications and Products in Data Processing
SDI	Sustainable Development Initiative
SEER	Savings per Eligible Employee Ratio
SMS	Short Message Service
SO_2	Sulphur dioxide
SPL	Spent Pot Lining
ST	Steam Turbine
STP	Sewage Treatment Plant
t	Tonne
TMS	The Minerals, Metals & Materials Society
TQM	Total Quality Management
TRIFR	Total Recordable Injury Frequency Rate
UAE	United Arab Emirates
UK	United Kingdom
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
US$	United States Dollar
USA	United States of America
WED	World Environment Day
WHO	World Health Organization

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