



# EGA 2018 Sustainability Report

Making modern life possible





## Making modern life possible

Aluminium makes modern life possible. It is used in a multitude of applications ranging from skyscrapers to transportation systems and smartphones to aerospace.

EGA is the largest industrial company in the United Arab Emirates outside oil and gas, and a significant investor in the Republic of Guinea. It is not just our products that make modern life possible but also our contribution to economic diversification, our innovation and business leadership and the opportunities we create for our employees, customers, suppliers and the communities in which we operate.

Modern life depends on the adoption of, and adherence to, high standards of environmental and social responsibility.



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# 01



## Introduction



# Introduction

## About this report

Welcome to Emirates Global Aluminium's second annual sustainability report. This document presents facts and information on EGA's sustainability performance for 2018.

We have prepared all 2018 disclosures in accordance with:

- The Global Reporting Initiative Standards Core option<sup>1</sup>
- The Global Reporting Initiative mining and metal sector supplement<sup>2</sup>
- Reporting and disclosure requirements set by the Aluminium Stewardship Initiative Performance Standards<sup>3</sup>

Although 2018 is the focus for this report, we have also included data on key aspects of our business for 2015-2017 to illustrate trends over time.

To ensure appropriate content and data quality, the professional auditing firm KPMG has independently assured our disclosures in selected key performance areas including material sustainability topics. For more on the assurance statement please refer to pages 116-117 of this report.

**Our report covers the five areas that we consider vital to a successful and sustainable business:**



Quality products



Economic value generated and distributed



Environmental and social responsibility



Creating opportunity for people



Technology and innovation

For any questions or further information about this report, please contact: [sustainability@ega.ae](mailto:sustainability@ega.ae).

<sup>1</sup> Global Reporting Initiative Standards (GRI) provide a framework and international benchmark for public disclosure of economic, environmental and societal performance.

<sup>2</sup> GRI provides sector guidance for all reporting organisations in the mining and metals sector.

<sup>3</sup> The ASI Performance Standards define environmental, social and governance performance standards for sustainability issues specific to the aluminium value chain.





## Managing Director and Chief Executive Officer's statement

Aluminium makes modern life possible, it is a part of the products and infrastructure that people use every day. Lightweight, strong and infinitely recyclable, aluminium has an essential role to play in creating a more sustainable future and global demand for aluminium is growing. EGA is proud to produce one in every 25 tonnes of aluminium made worldwide.

We recognise that making products that help meet social and environmental challenges is not enough. It also matters how responsibly these products are made. At EGA, we aspire to be measured among the world's most responsible metals and mining companies in everything we do. In 2018 we made good progress against some of our goals, but there is still plenty left for us to achieve to keep matching and even exceed society's increasing sustainability expectations.

Safe production is our first priority. Zero harm is the only acceptable target. Unfortunately, in 2018 two colleagues lost their lives at our anode production facility in Jebel Ali. This tragic incident took place during a routine operation that we had performed the same way without injury for decades. We are acutely conscious of the devastating impact of this incident on our colleagues' families. We have done our best to support them fully through this difficult time.

Following the incident, we immediately suspended this process and a team that included independent experts conducted a thorough investigation to understand how the incident had happened. We are now implementing the investigation's findings across our business. These deaths completely overshadow our overall safety

performance, which showed a reduction in the number of recordable incidents on our sites in 2018.

In 2018 we had our best year ever of producing more with less. Our cast metal production was a record for EGA, at 2.63 million tonnes while the greenhouse gas intensity of our operations was the lowest in our history.

We also achieved our highest ever levels of process waste recycling. For example, we recycled more than 41 thousand tonnes of Spent Pot Lining (SPL), a waste stream of aluminium smelting. This was more SPL than we produced, reducing stockpiles generated in previous years and was the result of a decade of close collaboration with local cement manufacturers. Together we have transformed SPL from an unwanted hazardous waste to a valuable feedstock for the cement industry in the UAE.

In the Republic of Guinea we continued to implement our Biodiversity Action Plan for our bauxite mining project, restoring more than 100 thousand square metres of habitat using carefully selected native species. We also developed a Biodiversity Action Plan for our Al Taweelah operations in the UAE to formalise our conservation efforts including safeguards for the critically endangered hawksbill turtles that nest at our shoreline.

EGA is part of the communities in which we operate. For our long-term success, local people must benefit from our presence through employment and economic opportunity while the disruptions our heavy industry can cause must be minimised.













In Guinea 75 per cent of our employees were Guinean nationals in 2018. We continued to contribute to improving local communities and to ensure that the living standards of people relocated for our operations were at least maintained and if possible enhanced.

Our community engagement programmes in the UAE continued to emphasise youth development and education through the promotion of science, technology, engineering and mathematics. In Guinea in 2018 we provided vocational training and improved career prospects for more than 200 people while in the UAE we supported more than 20 schools.






In 2018 we continued to align our corporate sustainability strategy with the Aluminium Stewardship Initiative. Our intention is for our smelting and casting facility in Al Taweelah to become the first site in the Middle East to be certified against the Aluminium Stewardship Initiative's Performance Standards.

**Abdulla Kalban**  
Managing Director and CEO

2018 key statistics

 <b>Quality products</b>	 <b>Economic value generated and distributed</b>	 <b>Technology and innovation</b>
<b>Record production</b>  <b>2.63 million</b> Tonnes of cast metal produced	<b>Net income</b>  <b>AED 1.2 billion</b> (USD 318 million) Despite market challenges	<b>Technology exported to</b>  <b>Aluminium Bahrain</b> Confirming EGA as not just an exporter of metal, but also of knowledge.
<b>Premium aluminium</b>  <b>87%</b> Value-added products making EGA the world's biggest 'premium aluminium' producer	<b>Spend on local supplier</b>  <b>AED 6.8 billion</b> (USD 1.8 billion) Spend on local suppliers in Guinea and UAE	<b>Employee suggestions</b>  <b>38,000</b> An 11% increase compared with 2017
<b>Global market</b>  <b>360</b> Customers in total in 54 countries	<b>Community investments</b>  <b>AED 17 million</b> (USD 4.6 million) Community investments in UAE and Guinea	<b>Audited savings</b>  <b>AED 68.3 million</b> (USD: 18.7 million) Savings from employee suggestions, a 70% increase compared with 2017


**Creating opportunity for people**

<b>Employees</b>  <b>7,400+</b> Directly in the UAE and Guinea	<b>Contractors</b>  <b>10,000+</b> Engaged in construction in the UAE and Guinea	<b>Guinean nationals</b>  <b>75%</b> Of our employees in Guinea are Guinean nationals
<b>Scholarships</b>  <b>167</b> Students studying in the UAE in 2018	<b>Graduate trainees</b>  <b>100+</b> Enrolled in 18-month programme at any time	


**Environmental and social responsibility**

<b>Carbon emissions (tCO<sub>2</sub> e/t Al)</b>  <b>39% lower</b> Compared with the global industry average <sup>4</sup>	<b>SPL sent for recycling</b>  <b>&gt;100%</b> Achieving our target of 100%	<b>Local programmes</b>  <b>31</b> Supporting local communities in the UAE and Guinea
<b>NO<sub>x</sub> emissions (kg/Mwh)</b>  <b>5.7% lower</b> Compared with 2017	<b>Dross sent for recycling</b>  <b>100%</b> Achieving our target of 100%	<b>People benefitted in training</b>  <b>100,000</b> People benefitted from our training and awareness programmes in Guinea
<b>Fluoride emissions (kg/t Al)</b>  <b>11.8% lower</b> Compared with 2017	<b>Carbon dust recycled</b>  <b>46%</b> Short of our target of 66%	<b>Volunteers</b>  <b>949</b> Participated in community initiatives in UAE
<b>PFC emissions (kg/t Al)</b>  <b>96% lower</b> Compared with the global industry average <sup>4</sup>	<b>Less waste to landfill</b>  <b>35% less</b> Waste sent to landfill from smelting and casting operations, compared to 2017	<b>Education and youth development</b>  <b>470</b> People benefitted from EGA programmes in Guinea
<b>SO<sub>x</sub> emissions (kg/t Al)</b>  <b>6.8% increase</b> Compared with 2017	<b>Injury frequency rate</b>  <b>65% lower</b> When compared with the global industry average for smelting <sup>4</sup>	<b>Community school</b>  <b>350</b> Children benefitted from the school we built for the community of Tanéné in Guinea
<b>Waste generation</b>  <b>15% lower</b> From smelting and casting operations <sup>5</sup> compared to 2017	<b>Fatalities</b>  <b>2</b> At our anode production facilities in Jebel Ali	<b>Students reached</b>  <b>10,000+</b> From our promotion of science, technology, engineering and mathematics among schools in the UAE

<sup>4</sup> International Aluminium Institute (IAI) referenced for the global industry average.  
<sup>5</sup> Excludes SPL given intermittent nature of this waste stream.

## About Emirates Global Aluminium

**EGA is the world's largest 'premium aluminium' producer and the biggest industrial company in the UAE outside oil and gas.**

We directly employ over 7,100 people in the UAE and 300 in Guinea. We supply 360 customers in 54 countries.

EGA was formed in 2014 through the merger of Emirates Aluminium and Dubai Aluminium, but our history dates back to the 1970s when Dubai Aluminium was founded. We are owned equally by Mubadala Investment Company of Abu Dhabi and Investment Corporation of Dubai.

### Geographical footprint map

● EGA operations ● EGA regional subsidiaries



EGA operates two aluminium smelters, one in Abu Dhabi and one in Dubai. In 2018 we were developing an alumina refinery in the UAE and a bauxite mine with associated export facilities in Guinea. All these activities are included in the scope of our 2018 report.



Al Taweelah

#### Smelting, casting, anode production, power and water

- Commissioned in 2009, second phase in 2013
- 1,200 reduction cells in three potlines
- Nine casting stations producing more than 1.5 million tonnes of aluminium in 2018
- 3,100MW natural gas power plant
- 3.75 million gallons per day capacity desalination plant
- The site is the size of 555 football fields
- Site includes our head office



#### Al Taweelah alumina refinery (project during 2018)

- The first alumina refinery in the UAE and only the second in the Middle East
- Two million tonnes per year production capacity once fully ramped-up
- Will meet 40 per cent of UAE's alumina requirements



Jebel Ali

#### Smelting, casting, anode production, power and water

- Commissioned in 1979, with eight separate expansions since then
- 1,577 reduction cells in seven potlines
- 12 casting stations producing more than 1.1 million tonnes of aluminum in 2018
- 2,350MW natural gas power plant
- 30 million gallons per day capacity desalination plant
- The site is the size of 250 football fields



Guinea Alumina Corporation (GAC)

#### Bauxite mine and export facilities (project during 2018)

- Includes mine, rail infrastructure (much shared with existing operators) and export port
- 12 million tonnes per year production capacity once steady state operations achieved
- One of the largest greenfield investments in Guinea in the last 40 years

## Our vision, mission and values

At EGA, our vision is to provide the global economy with sustainable material of the highest quality.

Our vision is underpinned by a three-part mission statement:

01

We help shape the future by delivering high performance aluminium to our customers, for use in a range of cutting-edge applications.

02

We operate with a deep commitment to sustainability and to the well-being and development of our people.

03

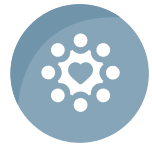
We focus on innovation, performance and profitability, and provide support for a broader aluminium cluster, ensuring a lasting contribution to the UAE and global economies.

In addition, we have identified three core values that underpin our vision:



### PROTECT

- Safety first and always
- Act with integrity, transparency and fairness to safeguard our business
- Protect the environment wherever we operate



### PROVIDE

- Ensure rewarding career and development opportunities for all our people
- Sustain relationships with our customers, suppliers, and partners built on mutual trust
- Contribute meaningfully to the communities in which we operate



### PERFORM

- Promote a performance-based work culture where individuals are empowered through ownership, accountability and team support
- Excel in operations through continuous improvement and innovation
- Grow profitably across the globe

### Memberships

- Aluminium Stewardship Initiative
- Gulf Aluminium Council
- International Aluminium Institute
- US - UAE Business Council
- The Aluminium Association
- Middle East Public Relations Association
- Dubai Quality Group
- Emirates Environmental Group
- Abu Dhabi Sustainability Group
- REACH Consortium





## EGA's role in the value chain

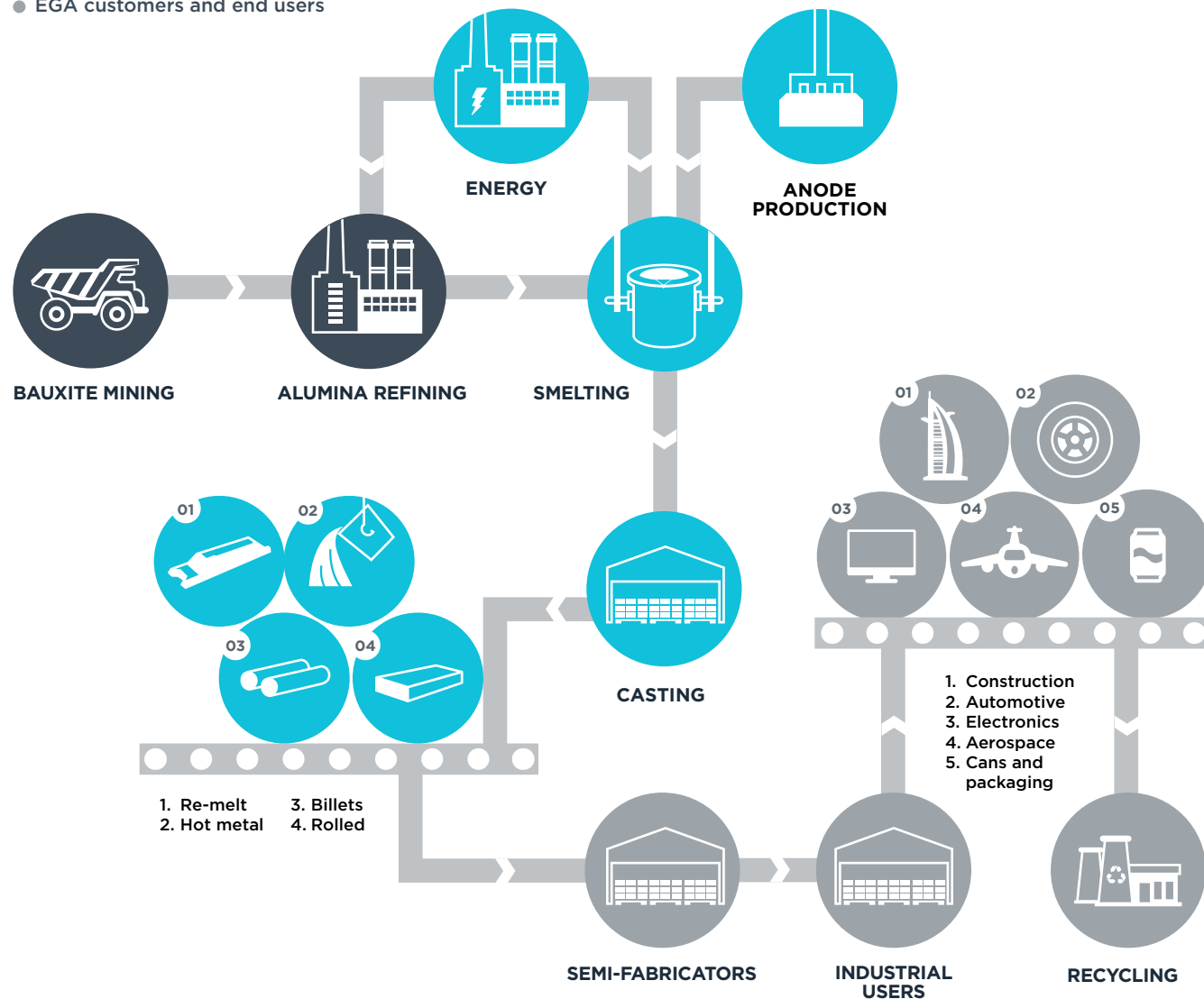
EGA's heritage is in the midstream of the aluminium value chain. We have two smelters in the UAE, each with its own captive power plant, anode production facilities and casthouses.

We provide primary aluminium to a wide variety of downstream users. The majority of our customers are semi-fabricators that make parts for use in industries that include automotive, construction, electronics and packaging.

During the period covered by this report, EGA was developing strategic projects upstream in the aluminium value chain: in bauxite mining in The Republic of Guinea and alumina refining in Abu Dhabi. These projects will establish EGA as an integrated global aluminium producer, creating value from mine to metal.

## EGA's role in the aluminium value chain in 2018

- EGA projects under development
- EGA current activity
- EGA customers and end users



## How aluminium is made

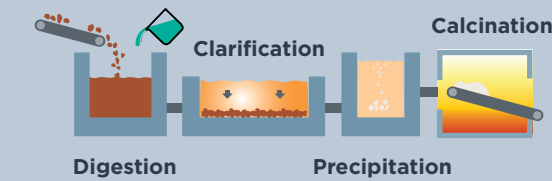
### 01 Bauxite mining

The aluminium production process starts with the mining of bauxite ore. Layers of bauxite are typically found near the surface, so it is generally extracted through open cast mining. Around 90 per cent of the world's bauxite resources are in tropical and sub-tropical regions.



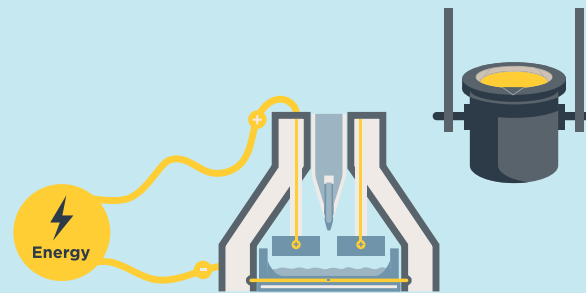
### 02 Alumina refining

Bauxite is refined into alumina using the Bayer process. Two to three tonnes of bauxite are required to produce one tonne of alumina. In the digestion stage, hot caustic soda is added to the bauxite to dissolve the aluminium-bearing minerals in the bauxite. Clarification separates bauxite solids from the pregnant liquor via sedimentations. In the precipitation stage, aluminium crystals are recovered from the liquor by crystallisation. Calcination is a roasting process to remove remaining water.



### 03 Aluminium smelting

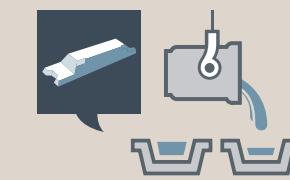
Aluminium smelting is energy intensive. A significant amount of energy is required to break the chemical bond between aluminium and oxygen in alumina. It takes approximately two tonnes of alumina to produce one tonne of aluminium. In 2018, EGA used less than 4.93 million tonnes of alumina to produce 2.63 million tonnes of aluminium.



### 04 Casting

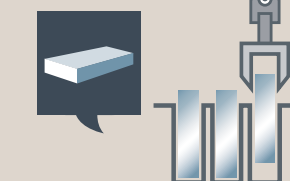
Aluminium is then transferred to the casthouse, where it is made into products using several different methods. Alloys are added in many of our products, according to customer specifications, before the solidification stage.

#### Standard Ingot



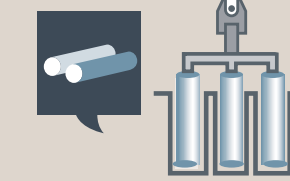
In **re-melt casting** liquid aluminium, at a temperature over 700°C, is poured into moulds. The moulds are cooled and the aluminium solidified before being packed and shipped to the customer.

#### Sheet Ingot



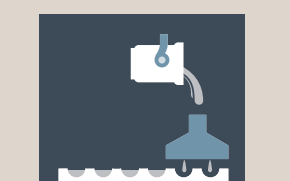
In **sheet ingot casting** cast aluminium slabs are either: heated and passed through a sequence of rollers until either the required plate thickness is obtained or until the metal is thin enough for cold rolling, or cut into plates.

#### Billets



In **billet casting** cast aluminium billets are heated and either: forced through a steel die by the extrusion process producing profiles, or forged producing different products such as wheels and automotive parts.

#### Molten metal



EGA also supplies **molten metal** to nearby customers. Receiving aluminium in molten form eliminates the need to use high energy to re-melt it before use. We transfer molten metal by truck in preheated 14.5 tonne crucibles which can keep the metal liquid for up to 18 hours at temperatures of around 780°C.

#### Hot metal transfer



## Our sustainability approach

### Aluminium is a versatile material which is vital for modern society.

Aluminium's use plays an essential role in improving transport efficiencies, reducing energy consumption and global greenhouse gas emissions, improving product longevity and reducing demand on natural resources.

But the production of aluminium is not without its challenges. Amongst others these include land-use change required for mining activities, the production of high volumes of waste during alumina refining, and the energy intensity of the smelting process and the emissions and hazardous waste generation associated with it. All need rigorous, robust and innovative management to ensure responsible production of aluminium.

Strong corporate governance, a focus on environmental performance and a commitment to making positive contributions to society are all part of our culture at EGA. But there are always improvements we can make.



EGA was the first Middle East headquartered company to join ASI. The ASI Performance Standards provide us with a global benchmark against which we can measure our performance and target improvements.

The Performance Standards set requirements for numerous sustainability topics applicable to EGA including:

- Business integrity
- Policy and management
- Transparency
- Material stewardship
- Greenhouse gas emissions
- Emissions, effluents and wastes
- Water stewardship
- Biodiversity
- Human rights
- Labour rights
- Occupational health and safety

In 2018 we made progress aligning our corporate sustainability approach to performance standards developed specifically for our industry through the Aluminium Stewardship Initiative (ASI). ASI provides a global consensus on what constitutes best practice in the production of aluminium and its use. The ASI Performance Standards have been developed through a global, multi-stakeholder standard setting process with input from companies operating throughout the aluminium value chain and from public consultation. The standards address sustainability issues all the way from bauxite mining to the production of consumer products made with aluminium.

**“The decisions we make today must not just be the right ones for us, but for future generations as well. They will judge us on how we were able to meet today’s challenges while also ensuring the best outcomes for tomorrow.”**



**SALMAN ABDULLA**  
Executive Vice President  
HSSEQ and Business Transformation

**“By aligning our sustainability strategy with the ASI Performance Standards we are addressing the principal challenges of our industry, not only as identified by EGA, but also as identified by our customers, NGOs, industrial associations, our peers and broader society.”**



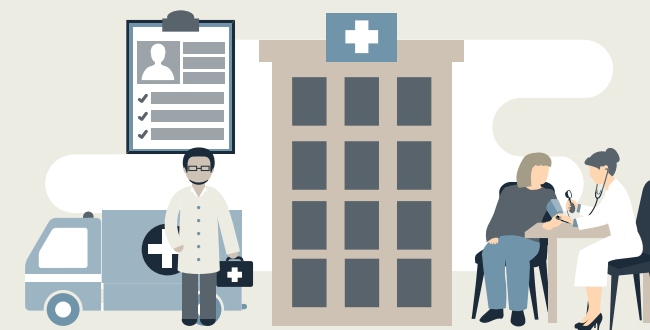
**STEVE BATER**  
Manager  
Sustainability

### 2018 alignment with the Sustainable Development Goals

There are numerous synergies between the ASI Performance Standards and the United Nations Sustainable Development Goals (SDGs). Alignment with ASI places us in a good position to contribute towards the SDGs most relevant to our industry. However, we do not rely solely on this synergy and are also making a further concerted effort to align our sustainability approach with the SDGs directly.



#### Ensure healthy lives and promote well-being for all at all ages.



- EGA provides health care for our employees. This includes medical insurance for our employees and operating clinics providing certified doctors and nurses.
- We developed healthcare facilities and promoted health awareness in neighbouring communities.
- We ran a number of awareness campaigns on physical and mental well-being for our employees focusing on heart disease, emotional health, food hygiene and mosquito bite prevention.
- We renovated a health centre in Guinea to serve the town of Boké and its surrounding region while our medical teams in Guinea continued to visit local communities, to advise on prevalent health issues and promote healthy lifestyles.



#### Ensure inclusive and equal education opportunities for all in order to promote lifelong learning.



- Education remains a key focus for our community engagement and development projects.
- In the UAE we continued successful partnerships with the Ministry of Education, Edutech, INJAZ UAE and the American University of Sharjah. This included promoting our 'Engineer the Future' programme to encourage STEM education.
- In Guinea we continued to run vocational training programmes aimed at supporting learning and the career development of young people from the local community. We also completed construction of a new, co-educational school in the community of Tanéné in the Boké region of western Guinea.

**8** DECENT WORK AND ECONOMIC GROWTH

**Promote inclusive and sustainable economic growth, employment and decent work for all.**



- In both Guinea and the UAE, EGA is focused on nationalising our workforce. Some 75 per cent of our employees in Guinea are Guinean nationals.
- We prioritise the local sourcing of goods and services in an effort to boost local economies. Our 2018 spend included AED 6.8 billion (USD 1.8 billion) on local suppliers in the UAE and USD 49 million on local suppliers in Guinea.
- We are also pioneering the role of UAE national women in heavy industry and in 2018 more than 19 per cent of supervisory and managerial roles were held by women.

**9** INDUSTRY, INNOVATION AND INFRASTRUCTURE

**Build resilient infrastructure, promote sustainable industrialisation and foster innovation.**



- EGA's in-house research and development division continued to develop technological advancements in the aluminium smelting process intended to increase productivity, reduce resource consumption, reduce our environmental impact and minimise capital and operational cost.
- In February 2016, EGA became the first UAE industrial company to license its core process technology internationally. In 2018, Aluminium Bahrain began production using our technology, confirming EGA as not just an exporter of metal but also of knowledge.

**12** RESPONSIBLE CONSUMPTION AND PRODUCTION

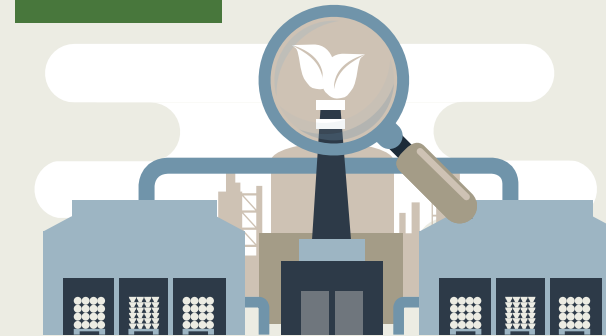
**Ensure sustainable consumption and production patterns.**



- We produced 24,127 more tonnes of metal in 2018 compared with 2017, while consuming 8,298,764 GJ less energy.
- Our waste management in the UAE is controlled through a comprehensive waste management plan. In the UAE we have developed uses for some wastes as feedstock for other industries and are exploring uses for other wastes.
- We recycled 41,323 tonnes of SPL, a record for EGA. This included 100 per cent of our SPL generated in 2018 as well as previously stockpiled material. We were able to achieve this thanks to a decade of close collaboration with local cement manufacturers.

**13** CLIMATE ACTION

**Take urgent action to combat climate change and its impacts.**



- Our carbon intensity was 39 per cent lower than the global industry average<sup>6</sup>.
- PFC emissions from aluminium smelting at EGA were 96 per cent below the global industry average<sup>6</sup>.

**15** LIFE ON LAND

**Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss.**



- In Guinea our biodiversity conservation efforts are documented, published and governed through our Biodiversity Management Plan which includes commitments for no net loss and positive gain for critical habitats.
- We developed a Biodiversity Action Plan (BAP) for our Al Taweelah operations in the UAE to formalise our conservation efforts, including long term plans and monitoring for the critically endangered hawksbill turtle (*Eretmochelys imbricata*) that nest at our shoreline every year.

**17** PARTNERSHIPS FOR THE GOALS

**Strengthen the means of implementation and revitalise the global partnership for sustainable development.**



- EGA has been involved in a multi-stakeholder engagement process looking into the future development and proposed updates to the ASI Performance Standards.
- Our Sustainability Manager is a member of the standards committee and we were active in all 2018 ASI working groups.

<sup>6</sup> International Aluminium Institute (IAI) referenced for the global industry average.

## Our corporate governance

EGA's Board of Directors has 10 board members including our Chairman, Vice Chairman, and Managing Director and Chief Executive Officer, plus two alternate Directors. The Board provides strategic direction and management supervision and ensures adequate controls are in place to achieve our vision and create long-term value for stakeholders.

EGA's Executive Committee consists of 11 members, many of whom have extensive operational experience and have contributed to the growth of EGA over decades-long careers with the company. Seven of our Executive Committee members originally joined EGA at the start of their working lives, either as new graduates or before tertiary studies sponsored by EGA. This committee is responsible for decision-making on economic, environmental and social aspects of the business.

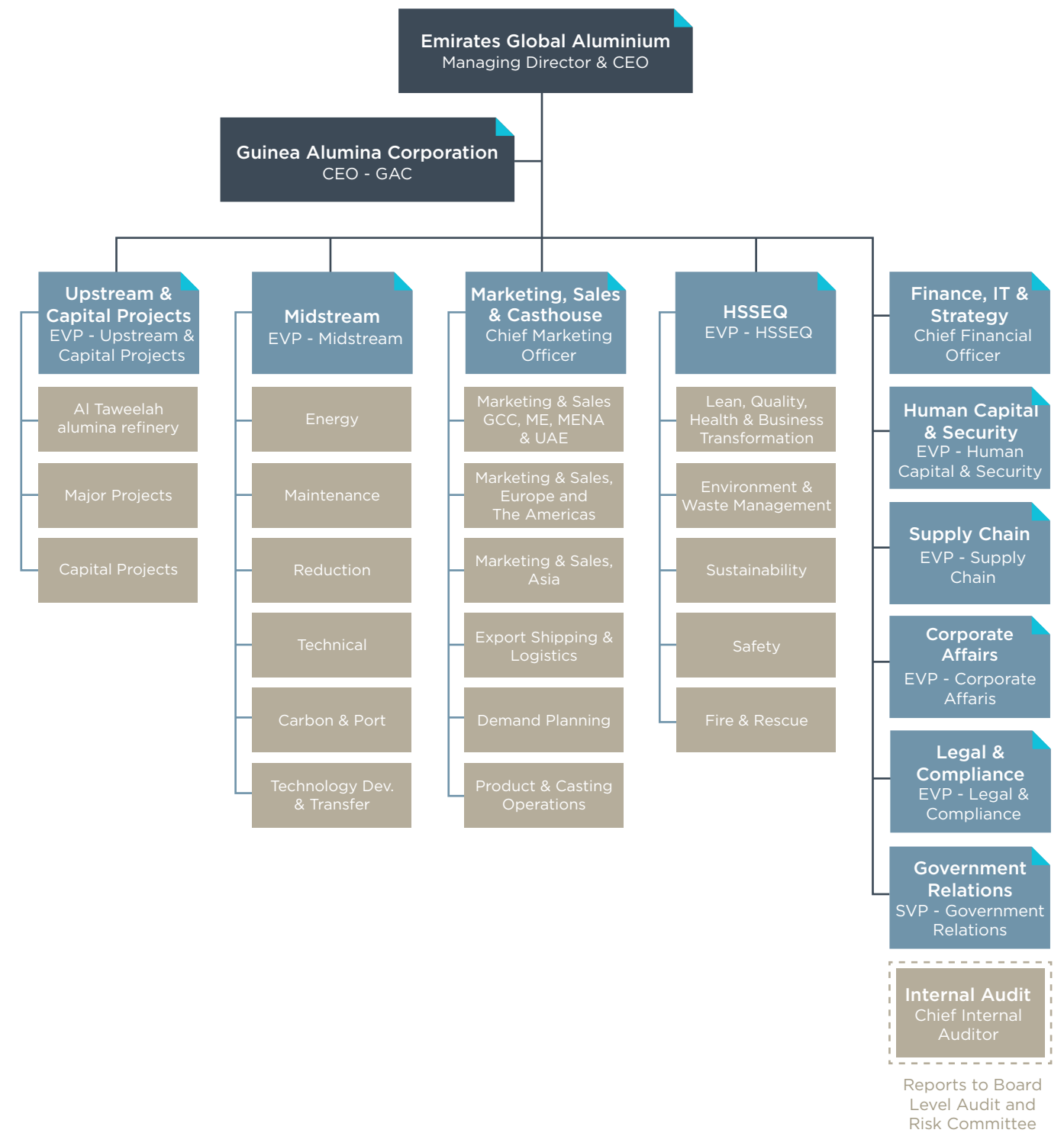
The committee is made up of the following:

- Managing Director and CEO
- Chief Financial Officer
- Chief Marketing Officer
- Executive Vice President, Legal and Compliance
- Executive Vice President, Health, Safety, Sustainability, Environment and Quality (HSSEQ) and Business Transformation
- Executive Vice President, Human Capital and Security
- Executive Vice President, Midstream
- Executive Vice President, Upstream and Capital Projects
- Executive Vice President, Supply Chain
- Senior Vice President, Government Relations
- Executive Vice President, Corporate Affairs



EGA has 10 departments under the Managing Director and CEO. Our sustainability team is part of EGA's HSSEQ department and reports directly to the Executive Vice President, HSSEQ and Business Transformation.

## EGA organisational structure



## Our stakeholders

Engagement with our stakeholders is essential to the success of EGA. We have numerous stakeholders spread across the globe with a diverse range of interests and expectations. Throughout this sustainability report, we have included details of

stakeholder engagements relevant to the chapter and associated material topic. Also, in 2018 we engaged with a diverse range of stakeholders to help us set the framework of this report in accordance with the Global Reporting Initiative's materiality principle.



## Our material topics

Sustainability covers a broad range of topics. Identifying what should be reported and to what extent, is an important component of the sustainability reporting process.

At EGA we adopt the Global Reporting Initiative's materiality principle whereby no one decision maker or department decides on appropriate report content. Every year we engage with internal and external stakeholders to help identify what we and the organisations we work with consider to be most relevant topics for EGA.

In 2018, to help inform our reporting process, a stakeholder engagement exercise was conducted through a formal questionnaire whereby participants were asked to rank 17 sustainability topics.

These 17 topics were selected to ensure coverage of all sustainability related issues included in the Global Reporting Initiative, with the exception of 'Customer Privacy'<sup>7</sup>.

We have also added two additional topics relevant to our industry, namely:

- **Technology and innovation** - given the importance that technological development and innovation plays in energy efficiency, environmental preservation and climate change mitigation.
- **Our metal** - given the importance that the quality, reliability and credentials of our end product plays in the long-term success of our organisation.

Internal stakeholders involved included decision makers and influencers associated with operations and construction projects. External stakeholders included international and local customers, government agencies, lenders' representatives, local communities and NGOs. In 2018 we engaged with a total of 63 stakeholders.

## Our material topics

The scores of respondents for each of the 17 topics were averaged and plotted as a "materiality matrix" in order to illustrate perceived levels of importance by EGA's stakeholders. Internal stakeholder results were plotted against the x-axis, external stakeholder results were plotted against the y-axis.

### Materiality matrix



While all 17 topics are considered important from the perspective of EGA's long term sustainability performance, all topics scoring above the median value on both the x and y-axis were considered the "critical topics" for 2018.

For each of the "critical topics" we have fully disclosed our management approach and provided Global Reporting Initiative topic specific disclosures.

<sup>7</sup> EGA is not an organisation involved in the handling of large volumes of private customer data as might be the case for a bank or telecommunications firm.

While the stakeholder engagement process allowed us to rank topics in terms of level of perceived materiality, it was clear from the scores that none of the topics were considered irrelevant to EGA's operations. We have therefore also provided disclosure on topics identified as very important or important (with the level of detail determined by the level of importance attributed by our stakeholders).

Disclosure requirements specific to the aluminium industry are also identified by the ASI Performance Standards. These requirements have been defined

through the multi-stakeholder development and public consultation process involved in the generation of these standards. Our 2018 report covers all ASI Performance Standards disclosure requirements for EGA's operational facilities.

We have engaged a third-party assurance provider to perform limited assurance covering our critical topics<sup>8</sup>. This external review helps to ensure consistent, objective and accurate reporting of our sustainability performance.

● Critical topics ● Very important topics ● Important topics ■ ASI Disclosure requirements

No.	Sustainability topic <sup>9</sup>	Disclosures	Alignment	Reporting boundary <sup>10</sup>	Page reference
1	A safe and healthy workplace at EGA	Occupational health and safety management approach	GRI	A	60-62
		Occupational health services	GRI	A	70-73
		Participation, consultation and communication on occupational health and safety	GRI	A	61, 95
		Safety performance figures	GRI	A	66-69
		Health related figures	GRI	A	70, 72
		Occupational health and safety training	GRI	A	61-62
2	Business integrity and ethics	Compliance management including approach to anti-corruption and anti-competitive behaviour	GRI	A	83-85
		Significant fines, judgements, penalties and non-monetary sanctions for failure to comply with applicable law	GRI & ASI	A	85
		Communication and training related to EGA code of conduct and anti-corruption policies	GRI	A	84
		Any confirmed instances of corruption and actions taken	GRI	A	84
3	Respecting human rights	Respecting rights of our employees, those in our value chain and the communities in which we operate	GRI	A	39, 74-76, 82-83, 95
		Incidents of discrimination and corrective actions taken	GRI	A	84
		Controls and assessment of risks associated with forced or child labour	GRI	A	39, 83
		Security personnel trained in human rights policies or procedures	GRI	C	77
		Respect of the rights of the community and any indigenous peoples	GRI	A	74-76
		Operations that have been subject to human rights reviews or impact assessments	GRI	A	83

<sup>8</sup> For further information, please refer to external assurance report (Page No. 118)

<sup>9</sup> For comparison against previous years material topics, please refer to our published 2017 report available at://www.ega.ae/media/1538/ega-2017-sustainability-report.pdf

<sup>10</sup> For the reporting boundary, 'A' covers all EGA activities (i.e. constructions and operations), 'B' covers EGA's operational activities only (i.e. excludes GAC and Al Taweelah alumina refinery) and 'C' covers GAC activities only.

No.	Sustainability topic <sup>9</sup>	Disclosures	Alignment	Reporting boundary <sup>10</sup>	Page reference
4	Environmental controls and management systems	Management approach to safeguarding the environment	GRI	A	44
		Our response to environmental incidents	GRI	A	57-58
		Details of any significant spills including associated impact assessments and remediation actions taken	GRI & ASI	A	57-58
		Any fines or non-monetary sanctions for non-compliance with environmental laws or regulations	GRI	A	57
		Stakeholder grievances regarding aspects of our environmental management practices	GRI	A	82
5	Our employees	Employee relations, benefits and welfare	GRI	A	88, 96, 99-101
		Training and development	GRI	A	96-97
		Diversity and affirmative employment	GRI	A	90-93
		Employee engagement	GRI	A	61, 99, 96, 109-112
6	Air quality and emissions	Management approach for the control and monitoring of significant emissions that could have adverse environmental or human health impacts	GRI	A	46-49
		Performance figures for significant emissions to air that could have adverse environmental or human health impacts	GRI & ASI	A	46-49
		Actions taken or plans in place to minimise significant air emissions	GRI & ASI	A	46, 48
7	Waste management	Waste management approach	GRI	A	55, 57
		Hazardous and non-hazardous waste generated and associated waste disposal methods	GRI & ASI	B	56-57
8	Responsible sourcing	Management approach to ensuring appropriate governance, social and environmental performance within supply chain	GRI	A	39
		Suppliers screened according to environmental and social criteria and any negative impacts identified	GRI	A	39
9	Contribution to local economic development	Proportion of spending on local suppliers and nationals hired in senior management	GRI	A	40, 90, 92
		Infrastructure investments and services supported	GRI	A	74-77, 80
10	Economic performance	Direct economic value generated and distributed	GRI	A	36
		Indirect economic benefits and contributions	GRI	A	38-39
11	Community engagement	Local community engagement, impact assessments and development programmes	GRI	A	74-81
		Community feedback and grievance management	GRI	A	82
12	Our metal	Product reliability, quality and feedback	EGA topic	A	30-32
		Material stewardship	GRI	A	17, 58
13	Natural capital	Significant impacts of activities on biodiversity	GRI	A	58-59
		Achieved outcomes from biodiversity management efforts	GRI & ASI	A	58-59
14	Technology and innovation	Research and development	EGA topic	A	104-108
		Innovation	EGA topic	A	109-112
15	Water consumption and discharge	Water withdrawal and use	GRI & ASI	A	53-54
		Discharges to water bodies	GRI & ASI	A	53-54
16	Climate change	GHG emissions and energy use	GRI & ASI	B	50-52
		Time-bound GHG emissions reduction targets	GRI & ASI	B	53
17	Openness and transparency	Payments to governments and policy regarding political contributions	GRI & ASI	A	36, 83
		Any instance of non-compliance regarding marketing communications	GRI	A	32

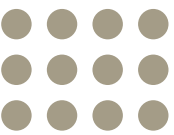


# 02



## Quality products

Aluminium makes modern life possible

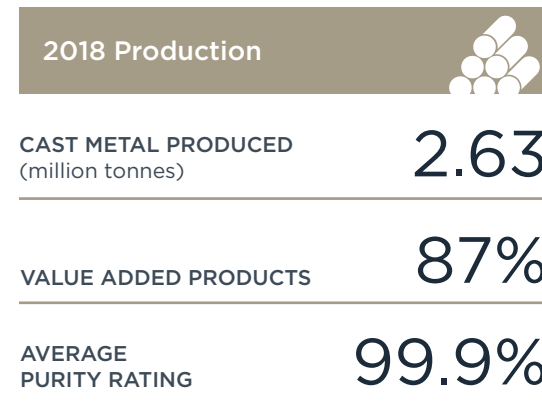


# Quality products

## Our products and our customers

EGA's aluminium reaches every corner of the globe and is part of the buildings, infrastructure and products that make modern life possible for people every day.

Our core business is the supply of high-quality metal that meets the needs and expectations of our customers, which are primarily companies engaged in making components for end-users in industries ranging from construction to automotive, electronics and packaging.



EGA is the world's largest producer of 'premium aluminium', known in our industry as a value-added products. EGA makes metal to customer specifications, to meet the mechanical properties required for its application at a suitable cost. Value-added products include alloys of aluminium with other elements such as silicon and magnesium.



Producing customer specified alloys, maximising the value of our cast aluminum and delivering the highest quality products to our customers, continues to be the core aspect of our business. Exceeding customer expectations helps improve efficiency and productivity. In 2018 we maintained our position as the largest producer of value-added products in the industry.



**DR FERAS ALLAN**  
Senior Vice President  
Product and Casting Operations



High purity aluminium is required for certain demanding applications such as in the aerospace industry. EGA is an important global supplier of high purity aluminium.

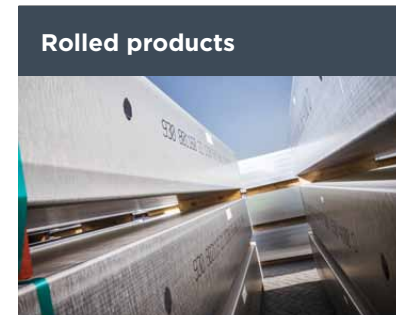
**360 customers in 54 countries**

In 2018 EGA supplied aluminium in Asia, the Middle East and North Africa (MENA region), Europe and the Americas

EGA has 21 casting stations in Jebel Ali and Al Taweelah to make the products our customers need. Our aluminium is provided to our customers in the following forms:



EGA's high-purity and foundry re-melt products are mainly supplied to electronics and aerospace manufacturers. They are used in the production of computer hard drives, memory disks and other electronic components. Our foundry alloys are also supplied to the automotive industry.



EGA's rolled products are produced as sheet ingots for use in the packaging and printing industries including the production of foil and lithographic printing plates. Sheet ingots are also supplied to car manufacturers, making vehicles lighter and improving fuel efficiency.



EGA's billets are supplied to transportation and automotive manufacturers, the construction industry (window and door frames) and for the manufacture of engineering and consumer durables.



EGA delivers liquid metal to nearby customers in Khalifa Industrial Zone Abu Dhabi, using sealed trucks and a dedicated hot metal road. Direct delivery of molten metal significantly reduces customer requirements for energy that would otherwise be required to re-melt the metal, also bringing savings in carbon emissions.



## Meeting international standards

In 2018 EGA attained certification to the International Automotive Task Force standard (IATF 16949:2016), making us one of the few primary aluminium producers with this certification.

IATF 16949:2016 combines requirements from the international automotive industry, detailing what is needed to achieve best practice when designing, developing, manufacturing, installing or servicing automotive products. It was developed by the International Automotive Task Force, a group of automotive trade associations and many of the world's leading automotive companies including BMW Group, General Motors, Ford and Volkswagen.

Achieving this standard demonstrates that EGA meets the necessary criteria to be able to provide quality products to automotive customers.

Our products also comply with the European Union's Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) and Restriction of Hazardous Substances (ROHS) standards. We also supply our customers with Material Safety Data Sheets that provide details on the specific chemical composition associated with each of our products.

Figure 1: Customer quality satisfaction<sup>11</sup>



## Customer satisfaction and feedback survey

Product quality is paramount to the success of our business. Our customers rely on us to provide consistently high-quality products on time and to specification.

Our smelters and cast houses are certified to ISO 9001:2015. We implement rigorous procedures that go beyond the requirements of this standard to ensure the quality of our products. Our metallurgy experts meet regularly with customers to provide advice and assistance to ensure their needs are met and efficiencies are maximised.

We conduct annual customer satisfaction surveys. In 2018 this survey recorded an overall product and services satisfaction rating of 93 per cent. We scored in product quality a 99 per cent satisfaction rating with 41 per cent of customers being extremely satisfied.



<sup>11</sup> In 2018 we were not informed of any non-compliance with regulations and/or voluntary codes concerning marketing communications.

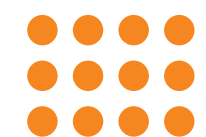


# 03



**Economic value  
generated and  
distributed**

Contributing to a modern,  
diversified economy



# Economic value generated and distributed

## Our economic contribution

EGA posted a solid financial performance in 2018, despite the significant challenges posed by aluminium and raw material price volatility. Our revenue increased to AED 23.4 billion (USD 6.4 billion) driven by higher sales

volumes and increased sales of value added products. Our net income<sup>12</sup> was AED 1.2 billion (USD 318 million) and we distributed AED 2 billion (USD 544 million) to our shareholders.

Figure 2: Direct economic value generated

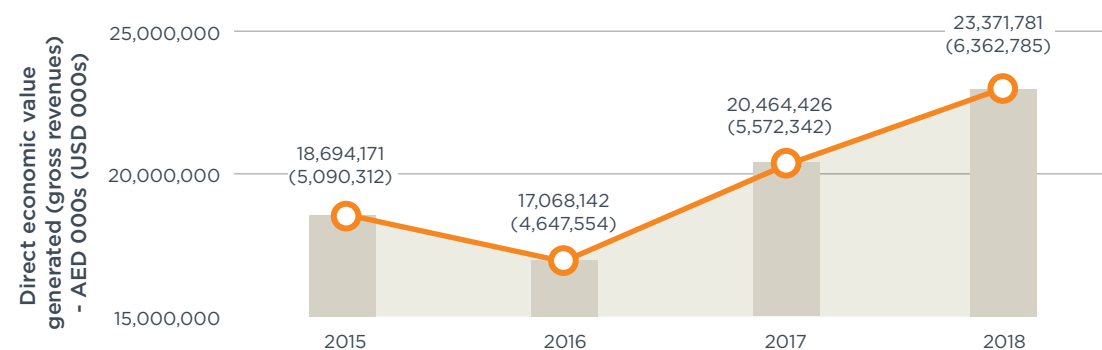
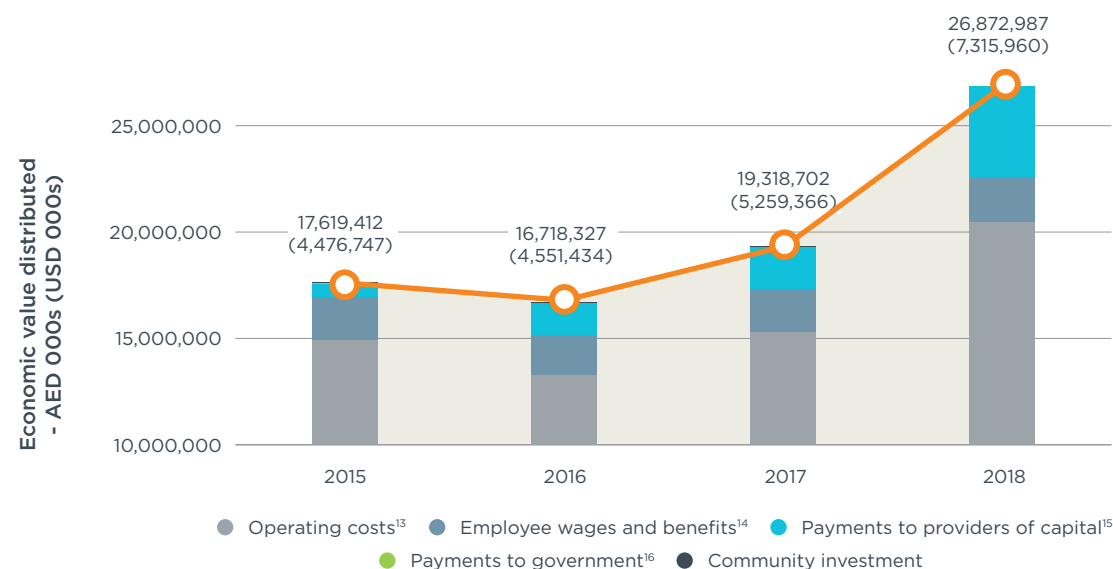
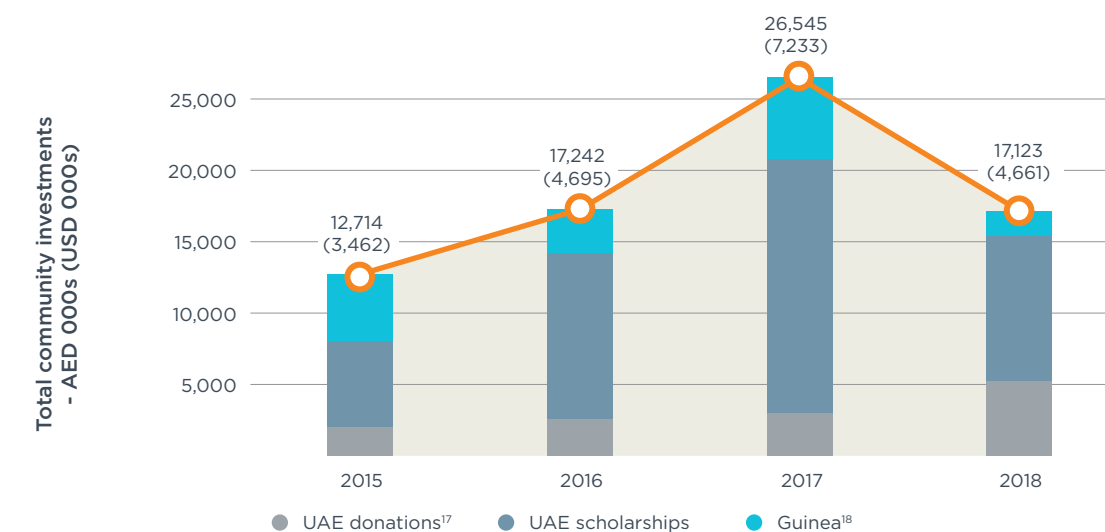


Figure 3: Economic value distributed



<sup>12</sup> Net income is calculated as total revenue less cost of goods sold, administrative costs, depreciation, interest and taxes.  
<sup>13</sup> Operating costs include cost of goods sold, sales and distribution cost, general and admin expenses. Increase in operating costs in 2018 are mainly due to an increase in raw material costs.  
<sup>14</sup> Employee wages and benefits include the total costs for EGA employees and staff directly contracted by EGA.  
<sup>15</sup> Payments to providers of capital are the payments made to EGA shareholders. Payments to providers of capital for 2015, 2016 and 2017 have been recalculated, as interest payments made to providers of loans were not included for previous years.  
<sup>16</sup> Payments to government are tax expenses/returns paid by EGA's international subsidiaries (Dubal Korea, Dubal America). Negative numbers reflect a tax return. There were no payments to governments of UAE and Guinea made in 2018.

Figure 4: Breakdown of community investments



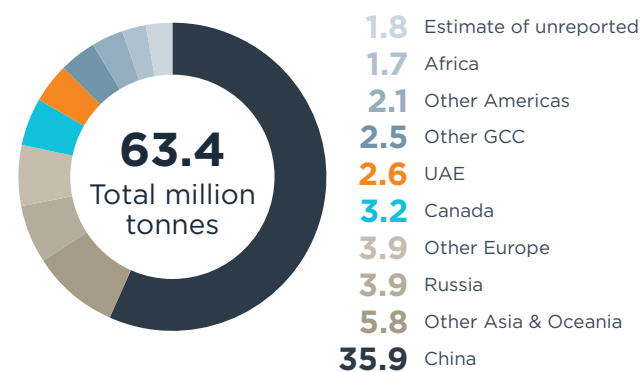
<sup>17</sup> Donations were made for community infrastructure developments, CSR activities, education and youth development programmes in the UAE.  
<sup>18</sup> Type of community investments in Guinea are mainly infrastructure projects for development of livelihood, healthcare and agriculture programmes.

## Our impact

We make a substantial contribution to the economic diversification goals of 'UAE Vision 2021' through our own production, our spending in the local supply chain, our growing sales to UAE downstream customers, and our contribution to a knowledge-based economy.

Since 1979 EGA has grown from a single site smelter producing 135 thousand tonnes of cast metal per year, to one of the world's largest primary aluminium producers producing over 2.6 million tonnes of cast metal annually. Our production makes the UAE the fifth largest aluminium producing nation, accounting for four per cent of global supply, as shown in Figure 5.

**Figure 5: Global primary aluminium production in 2017**



Source: The impact of the aluminium sector on the UAE economy, December 2018 by Oxford Economics

In 2018 we commissioned an economic impact study to understand better the total contribution to the UAE economy of the aluminium sector – that is EGA and the 26 downstream companies that make products in the UAE using our metal.

The study showed that in 2017 the aluminium sector in the UAE is estimated to have generated AED 20.09 billion (USD 5.47 billion) of economic activity in the UAE, which is 1.4 per cent of national GDP and 1.8 per cent of the non-oil economy. This total includes

the direct economic impact of the sector itself, the indirect impact of the sector's spending in the local supply chain, and the induced impact of the spending of wages earned in the sector in the consumer economy.



In the UAE, EGA employs over 7,100 people. In addition, in 2018 more than 10,000 contractor staff worked at our operational sites and construction projects.

Our 26 local customers making products using our metal are spread across the UAE. Their products are both sold in the UAE and exported, and are used in buildings, motor vehicles, trains and ships, industrial machinery, power supply networks, and construction materials, among other things.

EGA's primary aluminium is the biggest "Made in the UAE" export after oil and gas, meaning EGA makes an important contribution to the UAE's trade balance. In 2018 we exported AED 20.9 billion (USD 5.7 billion) of aluminium. This was more than 9 per cent of the UAE's total non-oil exports, which were AED 211.9 billion (USD 57.7 billion<sup>19</sup>) in 2018 according to published government statistics.



For every AED 1 of GDP generated by the aluminium sector, a further AED 1.26 of activity is supported elsewhere in the UAE economy.

In Guinea, the development of our mining project is contributing to the country's economic growth. We prioritise the local sourcing of goods and services wherever possible and create economic opportunity through direct and indirect employment. The construction workforce peaked at over 4,000 in 2018, with 85 per cent of construction jobs held by Guineans. Our local supply chain includes service companies, construction, and transport and maintenance operations. In addition, we are also developing railway, bridge and port infrastructure.

Our project is intended to contribute significantly towards further economic development in Guinea with current projections estimated at a total economic impact of USD 700 million per year (more than five per cent of Guinea's GDP).

## Responsible sourcing and our supply chain

An effective supply chain is essential to the competitiveness of our business. Responsible sourcing is a key commitment of our core policy which directly references the requirement for EGA suppliers to adhere to our values and sign up to our Supplier Code of Conduct<sup>20</sup> or provide comparable assurances.

Established in 2016, our Supplier Code of Conduct details the commitments we require in relation to human rights, environmental performance, conflict-free minerals, health and safety, workplace integrity including anti-corruption and bribery, harassment, discrimination and worker welfare.

EGA's Supplier Code of Conduct applies in both the UAE and Guinea.

## Supply chain performance

In 2018, as part of our on-boarding process, 100 per cent of new suppliers signed up to EGA's Supplier Code of Conduct (or provided comparable assurances). In addition, we continued to engage with all existing suppliers registered prior to 2016 to ask them to provide the same level of commitment by signing the Supplier Code of Conduct.

In 2018 we inspected 34 UAE and 18 international suppliers to confirm their adherence to the requirements of our Supplier Code of Conduct. Our inspections did not identify any significant negative environmental or social impacts.

In Guinea as part of our contract tendering and prequalification process, we have screened our four principal contractors<sup>21</sup> and three waste contractors for environmental and social criteria<sup>22</sup>. Additionally, we continued to assess their environmental performance through routine compliance inspections and audits. Instances such as unauthorised land disturbance, excessive dust and surface water sedimentation were thus identified and rectified during 2018, eliminating any long term adverse impacts.



<sup>19</sup> For more information, please refer to the UAE Minister of Economy website: <https://www.economy.gov.ae/english/Knowledge-Section/TradeRelations/Pages/Trade-Relation.aspx>

<sup>20</sup> Please visit EGA website for more information: <https://www.ega.ae/en/about-us/our-policies-and-certifications/>

<sup>21</sup> Principal contractors are those with responsibilities for large or strategic components of our project with day-to-day oversight of a construction area and management of subcontractors.

<sup>22</sup> Environmental criteria include impacts related to land disturbance, air quality, water and waste generation while social criteria include impacts related to health, safety, working conditions and human rights.

## Local procurement

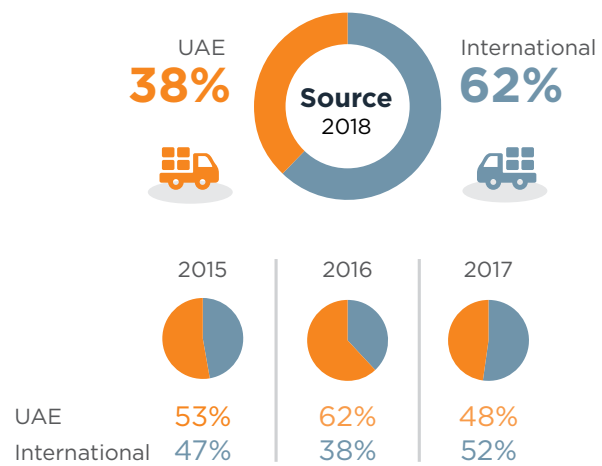
We recognise that procuring goods and services locally maximises the economic benefits of our activities for the countries in which we operate. Wherever we can, we maximize the use of the local supply chain.

**USD 1.8 billion**  
spent on local  
suppliers in UAE

In the UAE we spent USD 1.8 billion in 2018 on goods and services locally. Our major goods and services were sourced from industries such as natural resources and utilities, non-aluminium manufacturing and construction.

The production of aluminium requires some raw materials that are not available in the UAE. For example, there was no alumina production in the UAE in 2018 so we had to rely solely on imports to meet our requirements for this feedstock for aluminium smelters.

Figure 6: Percentage of the procurement budget spent in UAE<sup>23</sup>



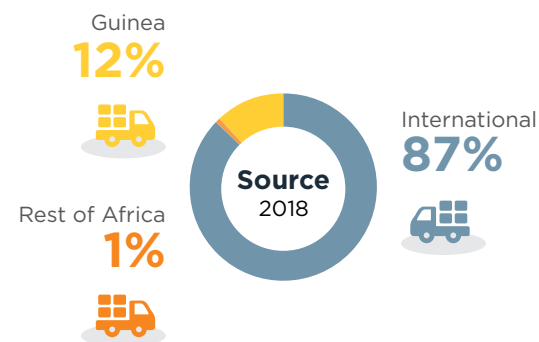
In Guinea the mining industry has historically relied extensively on imported goods and services, in the absence of competitive local suppliers. We recognise that the development of a local supply chain is vital both for Guinea to realise the full potential of economic benefits from its endowment of natural resources but also for the long-term success of mining businesses.

**USD 49 million**  
spent on local  
suppliers in Guinea

We prioritise the local sourcing of goods and services, choosing suppliers in Guinea before looking elsewhere in Africa and then outside the continent.

To assist and encourage local business in Guinea to tender for contracts, we have developed a specialist training programme providing details relating to our tender process, which can help suppliers meet the quality and integrity standards that we require. During 2018 we awarded 25 local contracts valued at a total of USD 3.43 million.

Figure 7: Percentage of the procurement budget spent in Guinea



<sup>23</sup> The reason for the decline in the percentage of local UAE spend in 2017 and 2018 is a result of a) increase in raw material prices sourced internationally and b) high spend on our new alumina refinery which has a high percentage of International technology providers.



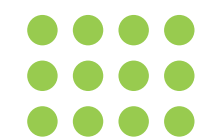


# 04



## Environmental and social responsibility

Modern life is only possible when companies are responsible



# Environmental and social responsibility

## Protection of the natural environment

Mining and industrial processes have the potential to cause significant environmental consequences if not managed responsibly. At EGA, activities with potential environmental impacts are overseen by a dedicated team of in-house environmental specialists. Working together, our operations and environment teams are responsible for managing all necessary controls, monitoring plans and audits plus constantly finding opportunities for improvement.

In the UAE, all our activities are managed through an environmental management system (EMS) certified against ISO 14001:2015.

In Guinea, potential environmental impacts from the development and operation of our mine have been identified through a detailed environmental and social impact assessment. This was prepared in accordance with the Equator Principles<sup>24</sup>, the International Finance Corporation Performance Standards<sup>25</sup> and regulatory requirements of the Guinean government<sup>26</sup>. Site activities are managed through a project-specific Social and Environmental Management Plan which is complemented by a series of detailed plans for air quality, biodiversity, dredging, noise control, soil management, waste management, water management, rehabilitation and reforestation. Our activities are monitored by an independent third party to ensure that we are meeting all our commitments under the International Finance Corporation Performance Standards and Equator Principles.



During 2018, our environmental performance in Guinea was characterised by the successful management of large volumes of construction waste, consolidation of our environmental monitoring programme and the successful execution of an extensive pilot revegetation programme. GAC remains committed to meet its environmental obligations while achieving its business objectives.



**ANDRÉ JOHN PIETERS**  
Environment Manager



In the UAE, potential environmental impacts from the construction of the Al Taweelah alumina refinery are managed through a site-specific Construction Environmental Management Plan, developed in accordance with international performance standards and the regulatory requirements of the UAE.

We regularly monitor our emissions and waste streams as well as the ambient environment in order to manage potential risks and avoid environmental impacts.

<sup>24</sup> The Equator Principles are a risk management framework, adopted by financial institutions, for determining, assessing and managing environmental and social risk. For more information please visit <https://equator-principles.com/>

<sup>25</sup> IFC Performance Standards are a risk management framework, adopted by financial institutions, for determining, assessing and managing environmental and social risk. For more information please visit <https://www.ifc.org/performancestandards>

<sup>26</sup> These assessment and mitigation commitments are made publicly available through disclosure on the International Finance Corporation website <https://disclosures.ifc.org/#/projectDetail/ESRS/24374>



## Protecting air quality

In 2018 our bauxite mining project in Guinea and the Al Taweelah alumina refinery were not yet operational and so emissions were limited to those commonly associated with construction activities. At both project sites we continued with our construction phase air quality monitoring programmes.

In Guinea we monitor gaseous emissions (SO<sub>x</sub> and NO<sub>x</sub>) from mobile equipment and generators. We also have dust particulate monitoring stations situated at strategic locations to record dust levels and to inform appropriate action necessary to avoid adverse impacts for nearby communities or wildlife.

At our operational sites in the UAE we generate more than 5,000 MW of electricity. We monitor emissions and local ambient air quality to ensure the effectiveness of our controls and regularly communicate the results to the environmental regulator. Protecting air quality is a key focus area for our environmental management system in the UAE.

### Nitrogen oxides from power production

Nitrogen oxides (NO<sub>x</sub>) are produced from a reaction between nitrogen and oxygen in the air at high temperatures. EGA's NO<sub>x</sub> emissions are primarily as a result of the combustion of natural gas at our power stations. The volume of our NO<sub>x</sub> emissions depends on how much electricity we are generating to meet our requirements for aluminium production. To minimise our NO<sub>x</sub> emissions we use low NO<sub>x</sub> burners to power gas turbines and casthouse furnaces.

In 2018 we improved the efficiency of power production at our power plants, reducing our total NO<sub>x</sub> intensity emissions by 5.7 per cent compared with 2017. This reduction was achieved through minimising the use of older turbines at our Jebel Ali site, improving our maintenance programmes and minimising outages.

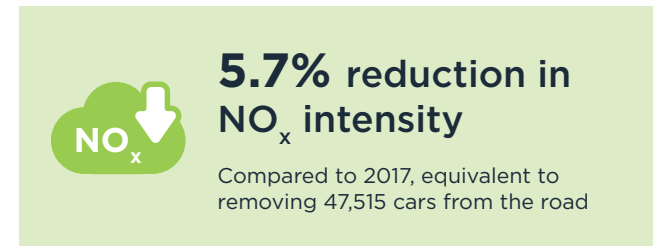
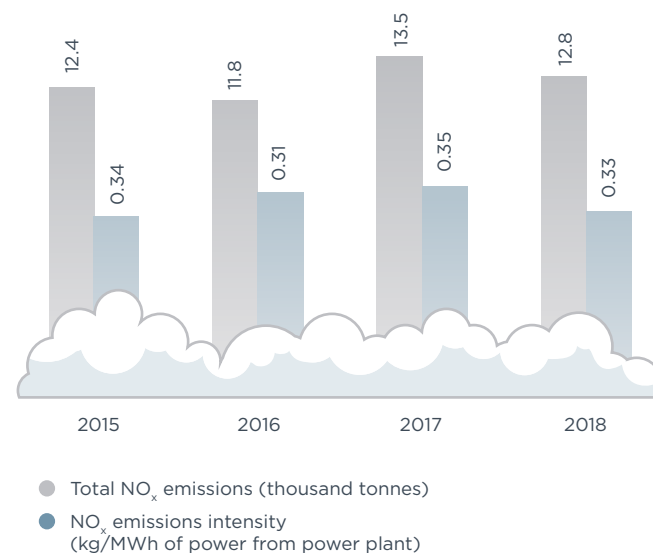


Figure 8: NO<sub>x</sub> emissions in the UAE<sup>27</sup>



Despite improvements in efficiency, our remaining use of older gas turbines at Jebel Ali means that we are not meeting the standards set by the environmental regulator in Dubai<sup>28</sup>. In 2018 work started on a new, power block that, when completed, will enable us to shut down older gas turbines at our Jebel Ali site and utilise the best available technology<sup>29</sup>. The new power block will be the first in the UAE equipped with a highly-efficient 'H class' gas turbine, significantly reducing our NO<sub>x</sub> emissions at Jebel Ali.

<sup>27</sup> Emissions are direct readings from analysers or manual balance estimations. NO<sub>x</sub> intensity and mass emissions for 2015, 2016, and 2017 have been adjusted from 2017 reported figures due to a miscalculation prior to publication in 2017. This miscalculation did not have any material impacts for EGA or the conclusions of the 2017 report.

<sup>28</sup> In 2016, we received a notice of violation from the environmental regulator, Dubai Municipality, regarding NO<sub>x</sub> emissions from our power plant at Jebel Ali. This violation was caused by our continuing use of older gas turbines that were installed prior to the implementation of relevant emission regulations in the Emirate of Dubai.

<sup>29</sup> Instead of fully decommissioning older turbines, these will be maintained such that they could be made available in the event of an emergency power shortage.

### Sulphur dioxide from smelting and casting in the UAE

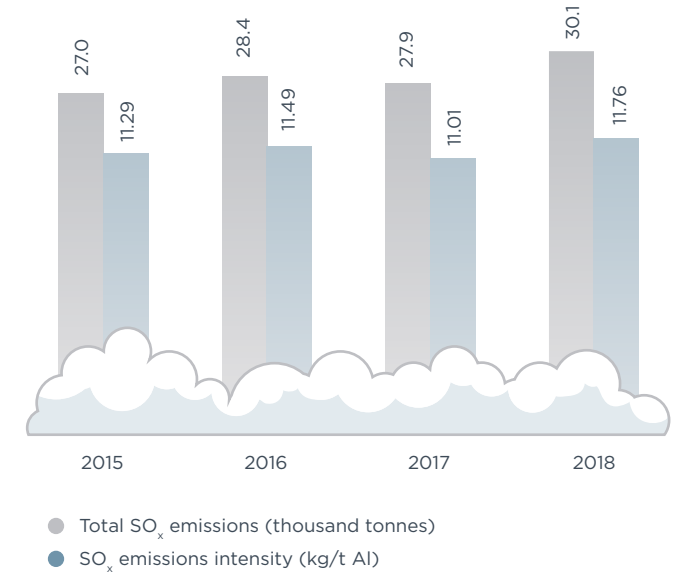
EGA manufactures its own anodes for use in the electrolytic process of aluminium smelting. The raw materials required to make anodes contain sulphur. During manufacture, these raw materials are heated to very high temperatures resulting in the formation and release of sulphur dioxide (SO<sub>2</sub>). SO<sub>2</sub> emissions are also generated in the electrolytic process, as anodes are consumed over time during the reduction of alumina to form aluminium. The intensity of SO<sub>2</sub> emissions varies according to the sulphur content of the raw material used in anode production.

We control our SO<sub>2</sub> emissions through strict specifications set for the sulphur content of the raw materials we use in anode production. In addition, our smelting technologies minimise anode consumption during the electrolysis process. We treat our emissions from potlines one and two at Al Taweelah with a wet scrubbing system which removes up to 95 per cent of the SO<sub>2</sub>.

In 2018 our SO<sub>2</sub> emission intensity increased by 6.8 per cent, mainly due to the decreased efficiency of our Al Taweelah wet scrubbers. We also recorded two exceedances of regulatory thresholds associated with SO<sub>2</sub> emissions from our anode production facility in Jebel Ali. Our investigation showed that these exceedances were the result of changes in operational

parameters. This was necessary to ensure the desired anode quality, in line with pot line requirements. In response to both exceedances, our mitigation measures included a combination of optimising operational and process parameters, and also reducing the percentage of sulphur in the process coke by blending in low-sulphur coke.

Figure 9: SO<sub>x</sub> emissions in the UAE<sup>30</sup>



<sup>30</sup> Emissions are direct readings from analysers or manual balance estimations.



### Fluoride emissions from smelting and casting in the UAE

Fluoride is an important additive in the electrolytic process as it significantly reduces energy consumption. However, a consequence is the generation of fluoride emissions.

EGA's fluoride emissions have always been carefully controlled and are in full accordance with international and UAE requirements thanks to the application of appropriate smelting technology (including the use of EGA's home-grown technology).

In 2018 we were able to further reduce our fluoride emissions intensity by 11.8 per cent compared with 2017. The reduction was mainly achieved through the completion of an upgrade to our fume treatment centres at Jebel Ali potlines one and three. EGA's fluoride emissions intensity is approximately 48 per cent below the global average<sup>31</sup>.

To further ensure the robustness of our control and monitoring of fluoride emissions, we conduct regular vegetation material sampling in and around our smelting facilities to confirm no adverse impacts. Results for 2018 continue to confirm normal fluoride levels in plant species used as indicators for air quality.

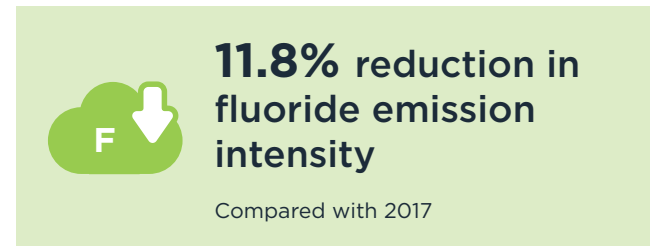
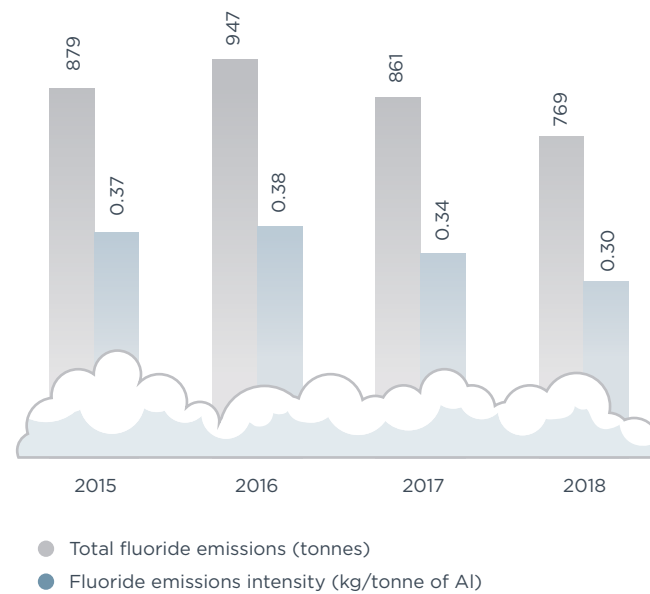


Figure 10: Fluoride emissions in the UAE<sup>32</sup>



**A commitment to protect the environment is one of the key values of our company, as the environments surrounding our smelters are unique. Our team drives this commitment every day, every minute, every second.**



**KRISHNAN RAGHAVAN**  
Superintendent - Environment  
Environment and Waste Management

<sup>31</sup> The mean global average fluoride emissions intensity in 2017 was 0.58 kilogram per tonne of aluminium. For more details refer to IAI published statistics: <http://www.world-aluminium.org/statistics/fluoride-emissions/#data>

<sup>32</sup> No emission factor is used and the values are a direct reading from the analyser or laboratory reports from manual stack sampling or mass balance estimation.

### Particulate matter from smelting and casting in UAE

Particulate matter is airborne particles such as dust, pollen, or aerosols and is often associated with combustion, heat transfer or the handling of dry materials.

Our control measures for particulate matter include the use of dust collectors and fabric filters at point emissions sources plus handling and storage requirements for materials and waste.

In 2018 our total particulate matter emissions were 2,155 tonnes for operations in the UAE.

In 2018 we recorded a one-time exceedance above the regulatory threshold for particulate matter at our Al Taweelah fume treatment plant. Our investigation found that this exceedance was caused by a defective filter which was subsequently replaced.

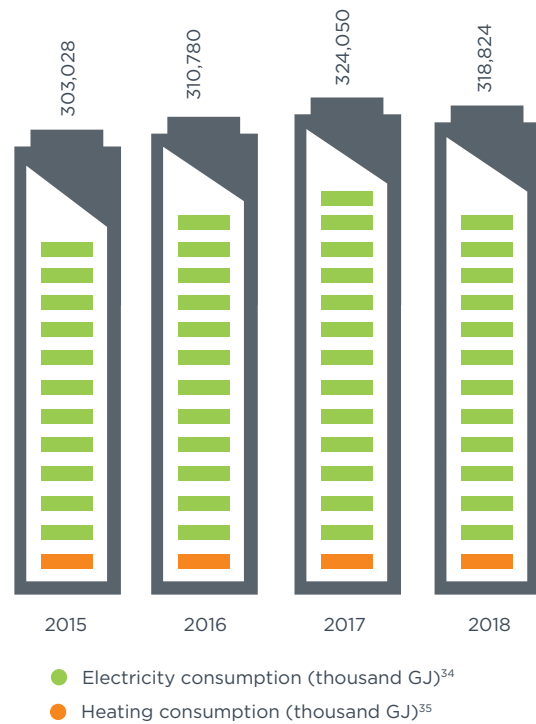


## Energy consumption

The feedstock for aluminium smelters is alumina, or aluminium oxide. The chemical bond between aluminium and oxygen in alumina is very strong. In order to break it and produce aluminium, a significant amount of energy is required.

Producing more aluminium with less energy is both a commercial and environmental imperative. We have developed our own technology for more than 25 years, progressively improving the energy efficiency of the aluminium smelting process. We have used our own technology in each of our smelter expansions since 1990 and retrofitted all our older potlines.

**Figure 11: UAE energy consumption from non-renewable resources<sup>33</sup>**

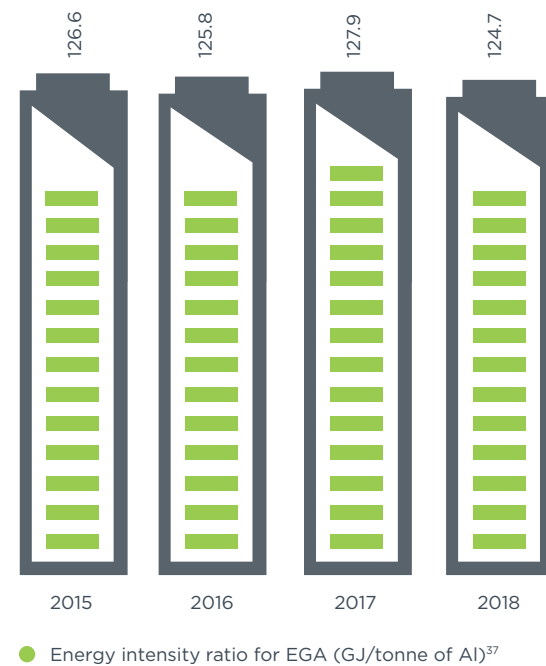


**2.5% reduction in energy intensity**

Compared with 2017. 24,127 t more metal with 8,298,764 GJ less energy

In 2018 we continued to implement numerous other energy saving initiatives resulting in total savings of approximately 242,173 MW and a 2.5 per cent reduction in our energy intensity ratio compared to 2017.

**Figure 12: UAE energy intensity<sup>36</sup>**



<sup>33</sup> Electricity and heating consumption values for 2014, 2015, 2016, and 2017 have been adjusted from 2017 reported figures due to previous double counting on heat consumption figures. This miscalculation did not have any material impacts for EGA or the conclusions of the 2017 report.

<sup>34</sup> Gigajoule (GJ). Standard energy conversion calculations are used. Reporting boundary includes EGA operations in Al Taweelah and Jebel Ali smelters.

<sup>35</sup> Heating consumption is associated with the industry process for anode in baking plant and casthouse furnaces; it also includes diesel used in mobile equipment.

<sup>36</sup> Energy intensity ratios for 2014, 2015, 2016, and 2017 have been adjusted from 2017 reported figures due to previous double counting on heat consumption figures. This miscalculation did not have any material impacts for EGA or the conclusions of the 2017 report.

<sup>37</sup> Gigajoule per tonne of aluminium (GJ/t Al). The ratio uses energy consumption at EGA in the UAE. Types of energy included in the reductions are electricity and heating. The metric is used as a denominator to calculate energy intensity.

## Greenhouse gas emissions

Fuel consumption at our power plants accounts for most of our greenhouse gas emissions. Other greenhouse gas emissions are generated by the consumption of anodes and Perfluorocarbons (PFC) emissions during the electrolysis process.

We set annual reduction targets and identify further opportunities for minimising greenhouse gas emissions through technological innovations and operational efficiencies. Progress against these targets is regularly monitored and reported to senior management.

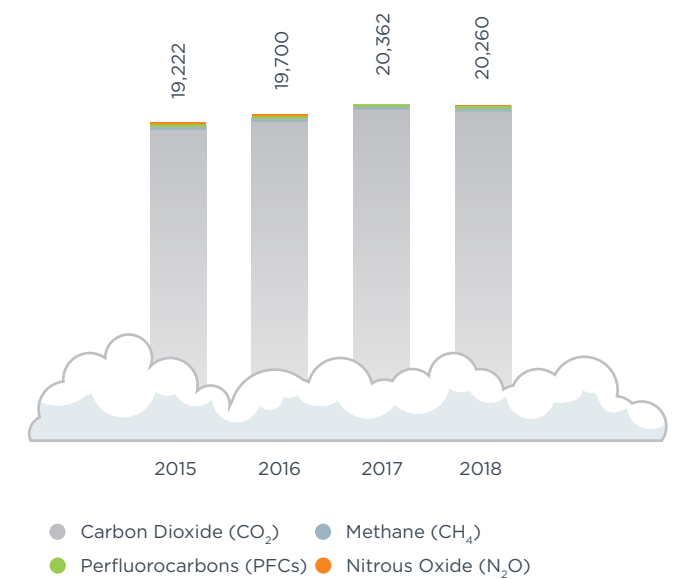
In 2018 the greenhouse gas intensity of our smelting, casting and power production was the lowest in our history at 7.93 t CO<sub>2</sub>e/t Al (exceeding our 2018 target of 7.97 t CO<sub>2</sub>e/t Al).

With an upgrade under development of our power generation at Jebel Ali through the use of 'H class' gas turbine technology, greenhouse gas emissions per tonne of aluminium are set to fall even further in the future.

**100,000+ tonnes of CO<sub>2</sub> reduced**

Compared with 2017. Equivalent to removing 21,231 cars from the road

**Figure 13: Direct (Scope 1) GHG emissions in the UAE (thousand tonnes of CO<sub>2</sub>e)<sup>38</sup>**



<sup>38</sup> Gross Warming Potential (GWP) for CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O are based on the Intergovernmental Panel on Climate Change (IPCC) 2<sup>nd</sup> assessment report, 1996. Standards used for estimation are GHG Protocol (revised edition) developed by WRI and WBCSD, the IAI addendum developed for the aluminium sector by the International Aluminium Institute (IAI, 2006) and the IPCC Guidelines. Scope 1 values for 2015, 2016, and 2017 have been adjusted from 2017 reported figures due to previous miscalculations from assigning Scope 1 and Scope 2 emissions. This miscalculation did not have any material impacts for EGA or the conclusions of the 2017 report.

Indirect (Scope 2) emissions are generated as a consequence of energy exchange agreements whereby we mutually exchange energy with the grid. These agreements are in place in order to help the UAE maximise efficiencies in grid supply and demand. Agreements are on a net zero exchange basis. However, greenhouse gas emission factors associated with the grid are higher than greenhouse gas emission factors associated with EGA's power plants, resulting in a net gain in greenhouse gas emissions for EGA.

Figure 14: Indirect (Scope 2) GHG emissions in the UAE<sup>39</sup>

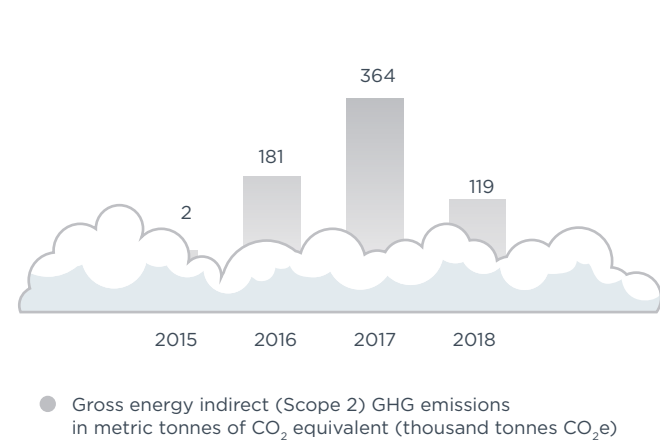
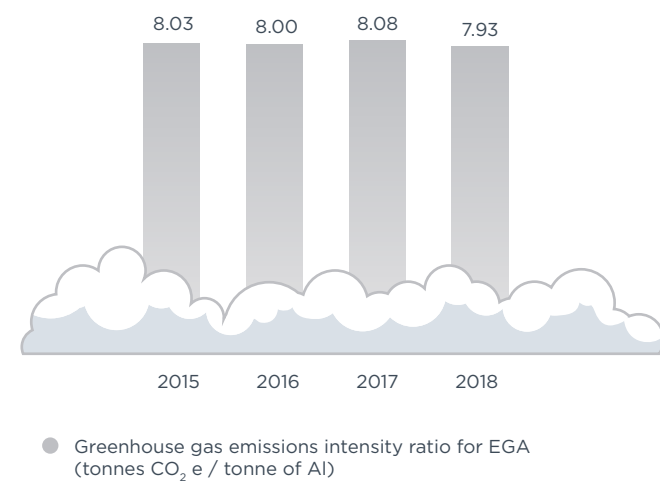


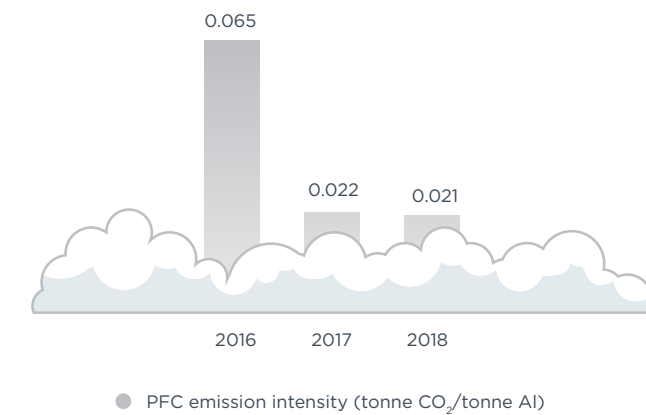
Figure 15: GHG emissions intensity in the UAE<sup>40</sup>



In 2018 PFC emissions from our smelters were reduced a further four per cent compared to 2017 as a result of operational efficiencies and technological upgrades that took place in 2017, including the retrofit of Jebel Ali potlines 1-3 with EGA's D18+ technology.

During 2018 our project in Guinea and our Al Taweelah alumina refinery were not yet operational. The main emissions were limited to the use of diesel in mobile diesel generators and construction vehicles.

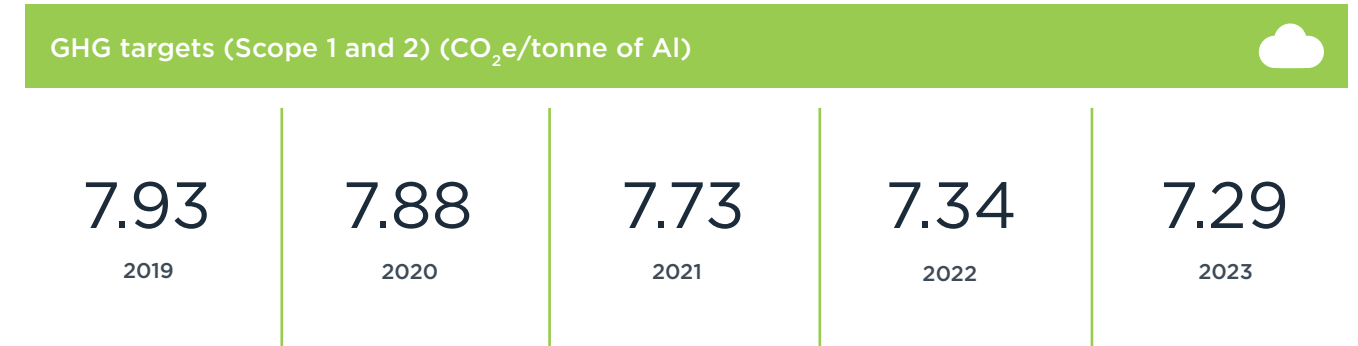
Figure 16: PFC emission intensity in the UAE



**Our carbon intensity is 39% lower than the global average<sup>41</sup>**

### Future targets for greenhouse gas emissions

In 2018 we updated our targets for greenhouse gas emission reductions. Our five year plan is due to commence in 2019 and includes specific targets for a reduction in emissions intensity from our aluminium smelting, casting and power production.



### Water use

In the UAE the majority of our water use is for cooling during electricity generation. We extract seawater for this purpose, more than 95 per cent of which is returned to the sea.

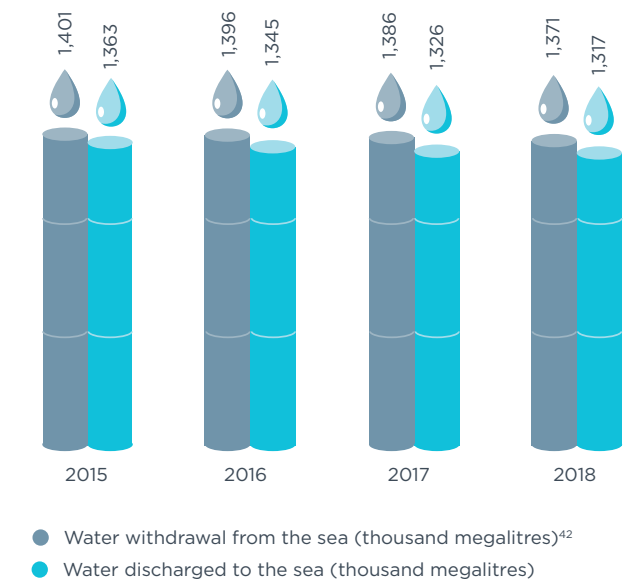
We also generate freshwater through desalination to meet our need for potable and distilled water in our industrial processes and for office and residential use on our sites. We also supply some of the water generated at our Jebel Ali facility to local customers.

For 2018 our total water consumption in the UAE was 54,250 mega litres.

We regularly monitor the quality of the water we return to the sea for various assessments including temperature, salinity and dissolved oxygen.

In 2018 we recorded numerous minor exceedances in regulatory thresholds for seawater discharge at Al Taweelah and four instances at Jebel Ali. All were investigated to identify the root cause and remedial action was taken. There were no discernible environmental impacts and all exceedances were reported to the environmental regulatory authority.

Figure 17: Water withdrawal and discharge in the UAE



<sup>39</sup> Variations in our reported indirect GHG emissions are a consequence of the total amount of energy exchanged and different GHG emissions factors applicable to energy sourced from the grid. Gross Warming Potential (GWP) for CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O are based on the Intergovernmental Panel on Climate Change (IPCC) 2<sup>nd</sup> assessment report, 1996. Standards used for estimation are GHG Protocol (revised edition) developed by WRI and WBCSD.

<sup>40</sup> Reported data from 2018 includes two decimal places for greater accuracy - reported 2017 figures were to one decimal place only.

<sup>41</sup> |A| referenced for the global industry average.

**446**  
mega liters of water recycled and reused in the UAE

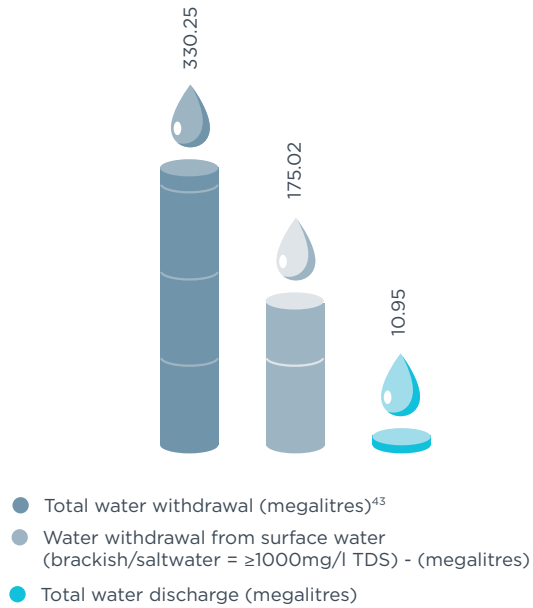
Our freshwater recycling activities include the use of treated effluent to meet all of our irrigation needs and the re-use of caskhouse maintenance water for emissions control during the manufacture of anodes. We ensure that the quality of this water is tested for all applicable parameters and meets the standards for on-site irrigation use.



In Guinea we manage our water related impacts through an Integrated Water Management Plan. This plan establishes specific strategies and targets for water use, treatment and protection. In 2018 we met our water needs through extraction from the Tiouladiwol Reservoir, Tinguilinta River and Dougoufissa Creek. Our main needs for water are for sanitation, construction activities and dust suppression.

In 2018 the only water discharge at our Guinea project was from our sewage treatment facility. Discharge from this facility is monitored to ensure that regulatory limits and international standards are met. In 2018 we identified several exceedances above target limits, all of which were addressed by improved chlorination.

Figure 18: 2018 Total water withdrawal and discharge in Guinea



<sup>42</sup> Flow meter used for calculation. Water withdrawn from sea is used not only for aluminium production but also used for potable water production in Jebel Ali.  
<sup>43</sup> The calculation of total water withdrawal is based on manual readings from water bowser loads.

Waste management in the UAE

At EGA the waste hierarchy is at the core of our waste management decisions. We have a comprehensive Waste Management Plan, with a long-term aspiration of sending zero process waste to landfill. In the UAE we are exploring and developing various opportunities for our waste streams to be used as feedstock for other industries.

Aluminium production generates a range of hazardous waste materials. The most significant hazardous waste streams in terms of volume are:

- **Spent pot lining (SPL)** - the used inner lining of reduction cells, which need to be replaced after several years of operation
- **Dross** - a mass of impurities that floats to the top of molten aluminium and is removed during the smelting process
- **Carbon dust** - a by-product from the manufacture of anodes

**15%** reduction in waste generation  
Compared to 2017 (excluding SPL)



**35%** reduction in waste sent to landfill  
Compared with 2017

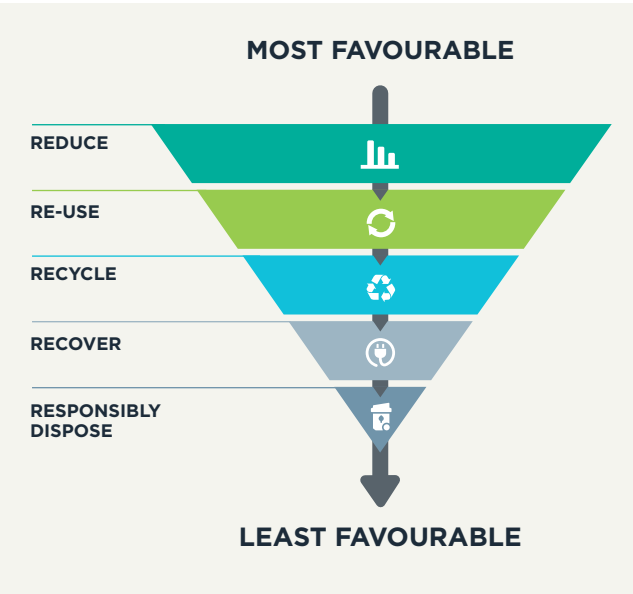
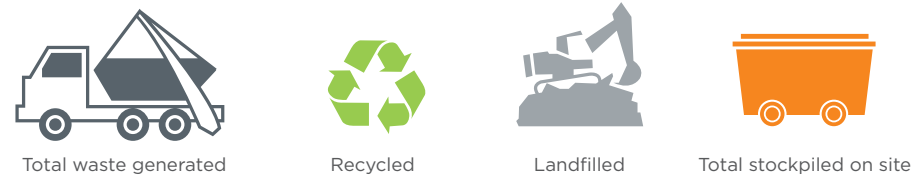
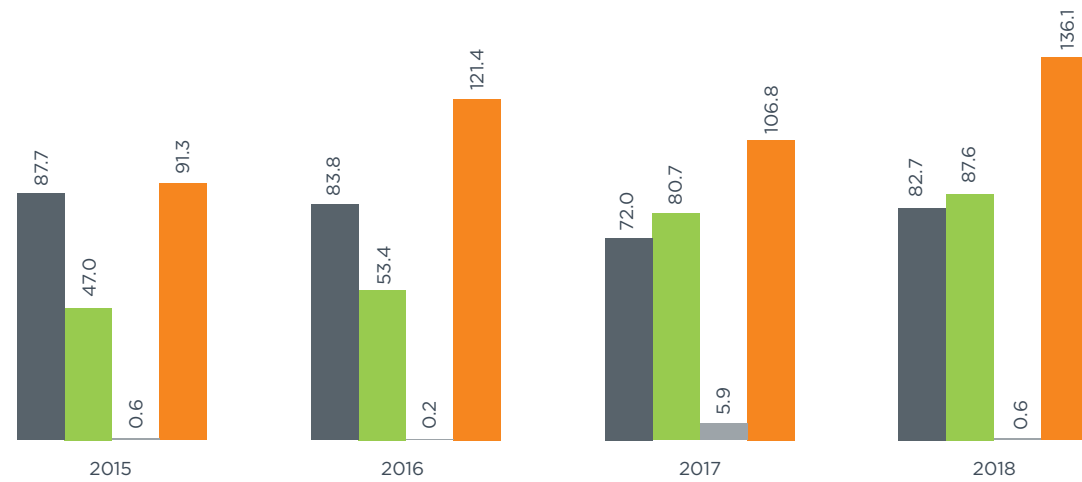


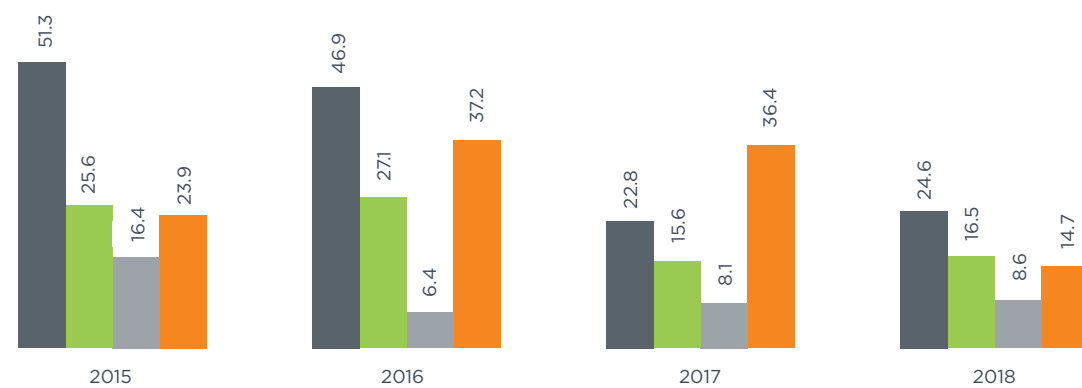
Figure 19: Waste type and disposal method in the UAE



Hazardous waste (thousand tonnes)



Non-hazardous waste (thousand tonnes)



In 2018 we recycled 41,323 tonnes of SPL, a record for EGA. This included all our SPL generation in 2018 as well as some previously stockpiled material. We send our SPL to the UAE cement industry for use as a feedstock and alternative fuel.

In 2018, EGA conducted a study called SPL use in cement production with Massachusetts Institute of Technology. Results<sup>44</sup> of the study shows that this collaboration helps cement companies to reduce their NO<sub>x</sub> and carbon emissions.



In 2018, our recycling rate for carbon dust was only 46 per cent. However, we are confident we will find a long term solution in 2019, again working with the UAE cement industry. With a high calorific value, this material is suitable for use as an alternative fuel and we have already signed contracts with specialised companies for removal, pre-treatment and recycling.

In 2018, 100 per cent of our dross was sent to specialised recycling facilities to recover aluminium from the material. Recovered aluminium and a salt slag by-product is returned to EGA. No aluminium is wasted, with the recovered metal going back into our industrial process. Currently, salt slag is either stockpiled or landfilled. For the future, we are planning to recycle salt slag through a dedicated treatment facility currently under construction near our site in Abu Dhabi.

### Waste management in Guinea

In Guinea we aim to minimise waste generation and avoid potential impacts. Waste streams are generated from construction activities, offices and kitchens. Our Waste Management Plan details requirements for avoiding and minimising waste generation, provisions for waste storage areas, waste skips and bins plus requirements for effective training.

We have designated waste storage areas on our project sites for both hazardous and non-hazardous waste streams. Our environment team ensures that wastes are segregated and appropriately stored at the designated storage areas until disposal.

Our main hazardous waste streams are hydrocarbon liquids and contaminated hydrocarbon containers. Our non-hazardous waste includes paper, glass, plastic, inert building waste and scrap steel.

In 2018 all waste generation in Guinea was diverted from landfill including 7,924 tonnes of non-hazardous waste and 258 tonnes of hazardous waste.



### EGA receives Gulf Aluminium Council (GAC) Environmental Award for SPL management

The Gulf Aluminium Council (GAC) Environment Award recognises achievements associated with innovation that promote sustainable practices.

In 2018 EGA received this award in recognition of our efforts in SPL management and our role in transforming an unwanted hazardous waste into a valuable feedstock for the UAE's cement industry. This initiative is also helping promote the circular economy in this region.

### Our response to environmental incidents

In 2018 we did not receive any fines or non-monetary sanctions for non-compliance with environmental laws or regulations.

Remediation efforts associated with two past diesel spills at our Al Taweelah site were ongoing during 2018. Based on a detailed site assessment conducted by an independent third party, we continued with our pump and treat remediation system. The first of these diesel spills was detected in 2015 near our power plant and affected an area of approximately 100 square metres. The second was detected in 2016 behind our cooling towers at Al Taweelah and affected an area of approximately 900 square metres. Both were caused by corroded underground pipelines. We have replaced all defective underground diesel pipelines with above ground pipelines.

By the end of 2018 we had pumped and treated more than 90,000 m<sup>3</sup> of groundwater from the remediation wells in these diesel contaminated areas. Neither of these incidents has resulted in any fines, sanctions or judicial undertakings but we regularly report our investigations and remediation efforts to the regulatory authority in Abu Dhabi.

<sup>44</sup>For further information, please refer to page No. 108

In 2018, we recorded one minor environmental incident at Al Taweelah alumina refinery associated with dust escaping from our bauxite residue storage building during ship uploading, at a time of windy weather. The dust was sufficient to create visible dust clouds but given the isolation of the area, there were no discernible impacts. After this incident we investigated the root cause and made adjustments for improved wind protection. We also reported the incident to the regulatory authority in Abu Dhabi.

In Guinea there were two minor environmental incidents in 2018. The first was due to unexpected high concentrations of iron-oxide within groundwater during dewatering activities, resulting in discolouration of a nearby estuarine creek. We investigated and confirmed that the iron-oxide was due to the natural geology of the site. After further analyses, we confirmed that the discharge to the creek did not have any adverse impacts for aquatic flora or fauna.

The second incident was an accidental leak of non-hazardous materials during offloading at the port area. Approximately 200kg of dry ammonium nitrate (a common agricultural fertiliser) mixed with surface water spilled into the sea. We improved bunding at our jetty to prevent any similar type of spill in the future and investigated the incident to confirm that there had been no significant impact on marine life.

“ EGA strives to implement an environmental management system of the highest quality across the EGA Al Taweelah site which is evident in their monitoring requirements for construction projects. They work hard to ensure that project teams are informed and understand the level at which they must operate. This collaborative effort helps us to ensure that our projects are always improving in relation to construction and environmental management.



**ZOE SHHELLY**  
Environmental Engineer  
Hatch

### Material stewardship

In 2018 we commissioned our first environmental life cycle impact study for our full range of aluminium products, working with the Technical University of Berlin. The scope of this study is a “cradle to grave” approach, covering impacts from the extraction of bauxite through to the finished metal. This study will conclude in 2019 and we are planning to use the data to further investigate how we can mitigate potential impacts outside of our own operations and to assist our customers with the life cycle assessment of the products they make using our metal.

### Biodiversity

We depend on healthy, functioning ecosystems and must maintain these for future generations. The protection of the natural environment is part of our core policies at EGA – we always plan to avoid impacts from any of our operations.

In Guinea prior to the start of construction, our Social and Environmental Impact Assessment (SEIA) confirmed that our mine concession area, rail corridor and port areas are within close proximity to, and partially intersect, important areas for wildlife. The mine concession area intersects grassy and wooded savannah and gallery forests, all of high biodiversity value. Mangroves are located along the perimeter of our port development. The SEIA also identified that our areas of work include the habitats for 27 critically endangered species including the West African Chimpanzee, the Hooded Vulture and the West African Crocodile<sup>45</sup>. Our biodiversity conservation work is documented, published and governed through our Biodiversity Management Plan<sup>46</sup> prepared in accordance with IFC Performance Standards and includes a commitment to achieve no net loss and positive gain for critical habitats.

Since the beginning of the project, we have cleared approximately 5,083,847 square metres of vegetation from areas required for the construction of the mine, rail, road pipelines and other infrastructure. So far in the mine concession area we have restored 70,250 square metres, planting more than 1,000 trees and over 1,000,000 stands of vetiver bunchgrass. We have also built 350 metres of rocky sills to minimise sediment loading during the rainy season. Plant species used during our restoration programme are all native to the area and produced by our own nursery locally.

At the port area we have established a green belt around our port platform to create a natural dust filter and minimise the fugitive distribution of dust. This included the rehabilitation of a 42,300 square metre area with 1,000 trees and more than 500,000 stands of grass species. The tree species selected are both native and are well adapted for capturing airborne particles given their hairy leaves.

In the UAE our facilities at Al Taweelah are approximately two kilometres from Ras Ghanada, a nationally protected marine reserve. Our Jebel Ali site is approximately seven kilometres from the Jebel Ali Wildlife Sanctuary, which in 2018 was designated as a Ramsar site (confirmed as a wetland of international

importance for biodiversity). Both these protected areas support important clusters of coral, mangrove and seagrass. At both our sites our discharge monitoring efforts take account of these valuable conservation areas and to date we have not identified any adverse impacts associated with our operations.

In 2018 we developed a Biodiversity Action Plan for our Al Taweelah operations to formalise our conservation efforts and ensure alignment with international best practice, including the requirements of the Aluminium Stewardship Initiative. We have established long term plans and monitoring efforts, continuing our conservation activities for the critically endangered hawksbill turtle which nests at our shorelines every year.

“ My team and I feel that we have a duty to protect and nurture the biodiversity of our workplace – not just for the present, but to leave a lasting legacy for the future.

**PHILIP JOHN SPEECHLY**  
Associate Manager - Fire and Rescue  
HSSEQ



<sup>45</sup> For more information about the full SEIA study, please visit the International Finance Corporation (IFC) Project Information Portal website <https://disclosures.ifc.org/#/projectDetail/ESRS/24374>. Also, refer to International Union for Conservation of Nature (IUCN) Red List website <https://www.iucnredlist.org/> for more details about the species.

<sup>46</sup> For more information about Biodiversity Management Plan please visit IFC Project Information Portal website <https://disclosures.ifc.org/#/projectDetail/ESRS/24374>

## Health and safety of our employees

At EGA the health and safety of our employees, contractors and neighbours is our first priority. Providing safe and healthy working conditions is the first commitment in our core policies.

There are various hazards associated with our industrial operations and on-going projects that could result in safety incidents if they are not managed properly. Significant hazards in the production of aluminium include exposure to electromagnetic fields, high voltage, molten metal, noise, vibration, airborne contaminants, heat and dangerous materials.

At both our alumina refinery project in Al Taweelah and our mine development in Guinea, significant hazards in 2018 were associated with construction activities and included working at height, excavation, electrocution, moving vehicles, heavy loads and machinery.

Across all operations and project sites, EGA identifies work related hazards and assesses associated risks on a routine and non-routine basis, applying a hierarchy of controls in order to eliminate hazards and minimise risk. At all of our project or operational sites our processes of risk identification, control identification and hazard elimination are managed in accordance with statutory or internationally recognised standards and guidelines.

All of our operational sites in the UAE (both Abu Dhabi and Dubai), operate to an occupational health and safety management system certified to the British standard, OHSAS 18001:2007<sup>47</sup>. In 2018 we upgraded our UAE management system to meet the most up to date internationally recognised standard, the International Organization for Standardization's ISO 45001:2018<sup>48</sup>, with certification expected early 2019.

In Abu Dhabi, we also adhere to legal requirements for health and safety practices set by Abu Dhabi's Occupational Safety and Health Centre (OSHAD). OSHAD's requirements are aligned with international standards and include the necessity for an occupational health and safety management system<sup>49</sup>, regularly reviewed by OSHAD.

### Occupational Health and Safety Management Systems



## OHSAS 18001:2007

- Jebel Ali smelting and casting
- Al Taweelah smelting and casting

Both are expected to be upgraded to ISO:45001 in early 2019

## OSHAD

- Al Taweelah smelting and casting
- Al Taweelah alumina refinery project

## IFC PS 2 and World Bank Guidelines:

- Al Taweelah smelting and casting
- GAC bauxite mine project

Both smelting and casting in Al Taweelah and our mine development in Guinea operate according to an occupational health and safety management system developed in accordance with international guidelines, including IFC Performance Standard 2 and the World Bank Group Environmental, Health, and Safety Guidelines<sup>51</sup>.

We regularly undertake internal audits of each of our management systems to confirm conformance. In the UAE we are audited by independent third parties against the requirements of OHSAS 18001:2007 and OSHAD.

EGA's occupational health and safety management systems and associated safety controls are extended to all EGA employees and directly supervised contractors<sup>51</sup>. Indirectly supervised contractors are required to work to a health and safety system compliant with EGA's core requirements, defined as part of our Supplier Code of Conduct.

Safety is everyone's responsibility at EGA. All our employees and contractors are able to identify and suggest methods to improve safety and have access to ways to raise safety concerns without fear of reprisal. For example, suggestions or concerns can be raised via dedicated reporting lines, smartphone applications, open suggestion schemes, toolbox talks, safety steering committees, regular safety meetings and opportunities for face-to-face communication with our specialist safety teams. Any improvements or updates to risk identification procedures, and associated controls and requirements for hazard elimination are undertaken following concerns or suggestions raised by any of our colleagues under the guidance of our safety teams.

Task specific safety requirements are communicated to staff and directly supervised contractors through appropriate, tailored training events with refresher courses, at a frequency relevant to the degree

of risk<sup>52</sup>. Training needs are identified according to assessment by EGA's safety professionals and effectiveness monitored in accordance with our occupational health and safety management systems.

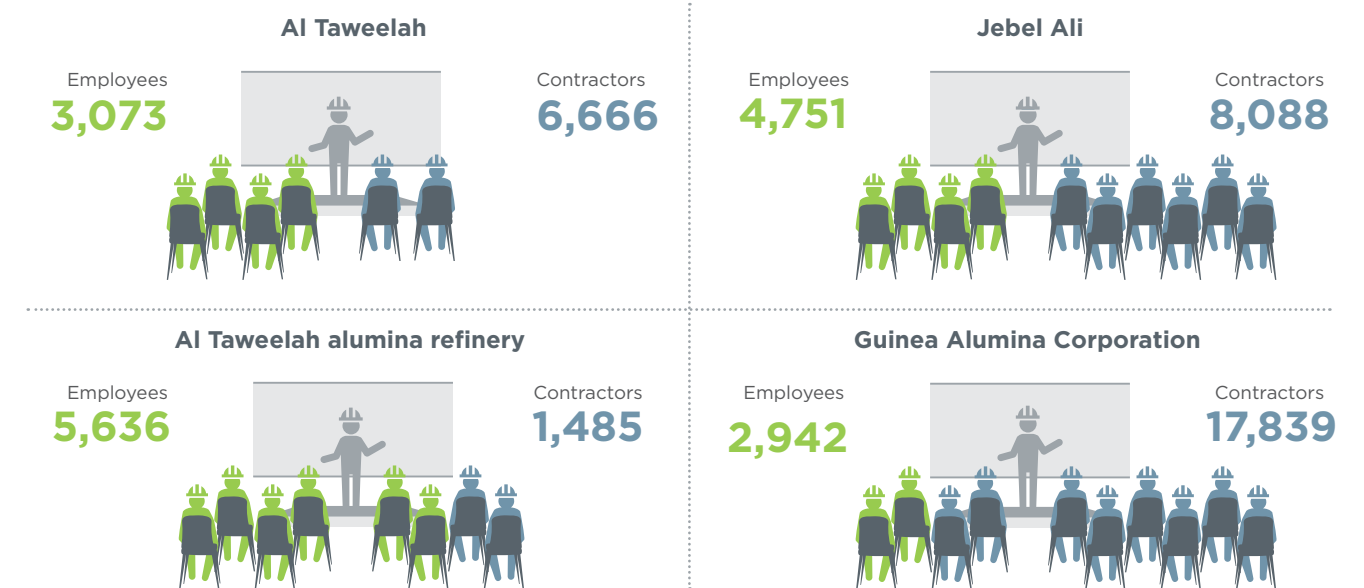


### Casthouse safety in Al Taweelah

Case study

In 2018, an employee designed and proposed a pneumatic clamp for mechanical saws used to cut aluminium slabs at a very high rate. The pneumatic clamp aligns and holds the blade during installation, a task which was previously done by hand. The implementation of this suggestion resulted in reduced risk and a significant time saving. EGA celebrated the employee who has made EGA a safer place. This is just one of 3,692 staff health and safety suggestions we implemented in 2018.

Figure 20: Safety training in 2018 (total number of attendees at safety courses)



<sup>47</sup> Details available at <https://www.bsigroup.com/en-GB/ohsas-18001-occupational-health-and-safety/>

<sup>48</sup> Details available at <https://www.iso.org/iso-45001-occupational-health-and-safety.html>

<sup>49</sup> Details available at <https://www.oshad.ae/en/Pages/Home.aspx>

<sup>50</sup> Details available at <https://www.ifc.org/>

<sup>51</sup> Directly supervised contractors include workforce who are not employees but whose work activities are directly controlled by EGA's health and safety procedures.

<sup>52</sup> All safety training is free of charge and is provided during paid working hours.

As part of our core policy we emphasise that anyone and everyone at EGA has the authority to refuse or stop any unsafe activity<sup>53</sup>. This message is included as part of our induction and safety refresher training.

Our safety team continually reviews safety data from across all of our operational and project sites to identify hazards, trends, potential concerns, areas of improvement and any need for an increased level of focus in a particular area. EGA is a member of the Health, Safety and Environment committees at the International Aluminium Institute and the Gulf Aluminium Council, enabling us to share performance data and learn from best practice.

Any and all incidents at EGA are investigated by our dedicated safety team with our focus being the welfare of any injured parties, root cause analysis and suitable prevention measures. Our intention is always to ensure that nobody is hurt in the same way again.

While robust safety systems, controls and training are essential, at EGA we believe that these alone are not enough. We work hard to instil a safety-focused culture that engages everyone who works for or with our organisation.



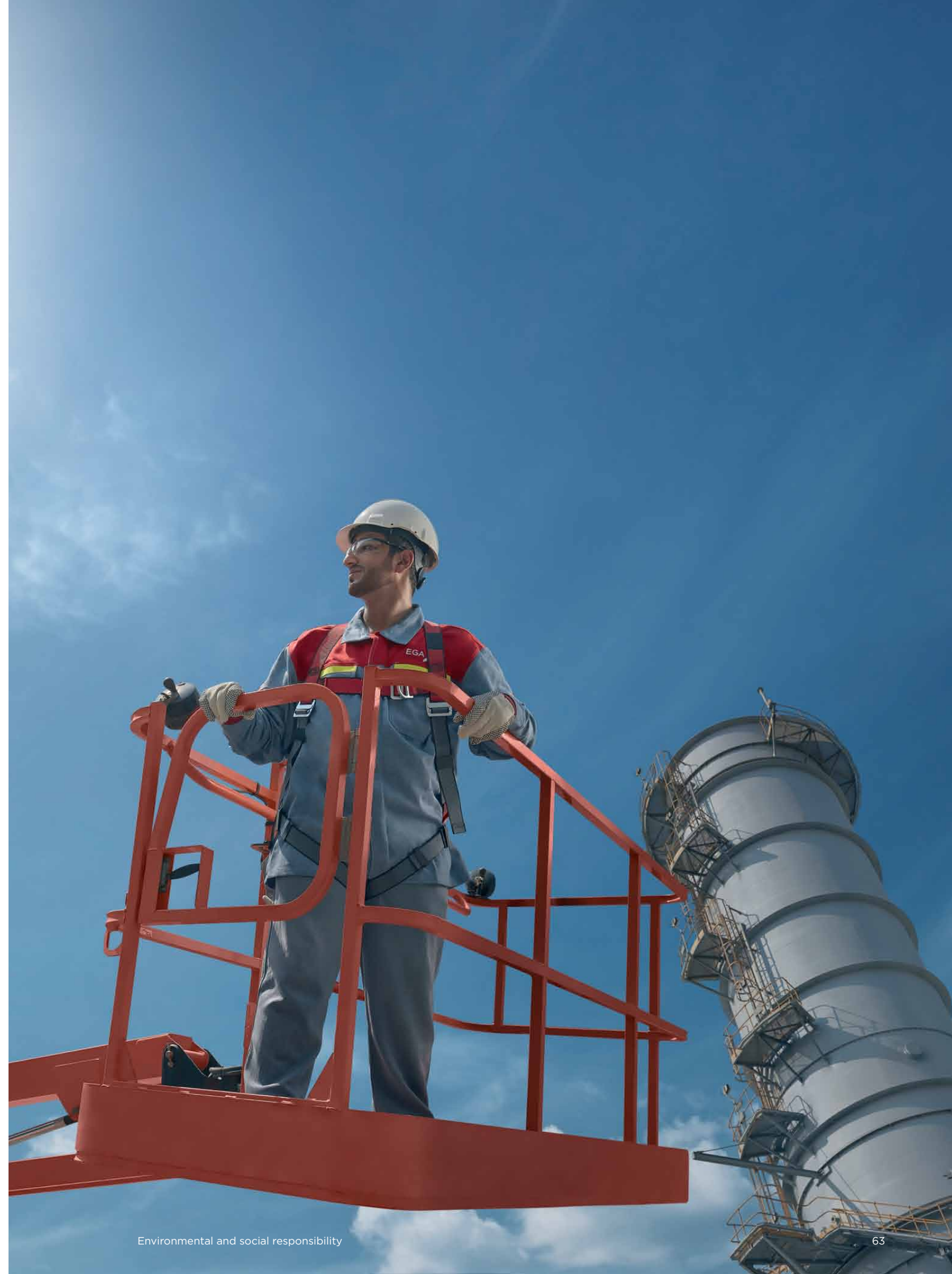
**EGA is committed to providing us with a unique safety culture and a safe working atmosphere. The company motivates our safe behaviour by providing recognition and rewards.**



**BIJU EDATHIPARAMBIL**  
Technician - Potlines Reduction



<sup>53</sup> Our core policy is published online at <https://www.ega.ae/en/about-us/our-policies-and-certifications/>





## Safety performance in the UAE

On 13<sup>th</sup> August 2018 two of our colleagues lost their lives at our anode production facility in Jebel Ali. This tragic incident happened in an area of the facility shut down for routine maintenance, during a routine operation that we had performed the same way for decades without injury. The men were part of a team working on repairs to a damaged flue wall which unexpectedly collapsed and trapped them. Although the area of the plant had been shut down, some of the bricks remained extremely hot.

We immediately stopped any similar works from being undertaken by EGA employees and contracted a specialist global refractory company to take over this work until our investigation was completed and actions to eliminate or mitigate the risks were implemented.

We also immediately initiated a full investigation engaging all those involved to understand what went wrong and how we could prevent such an incident from ever recurring. The investigation team included two independent third parties – a refractory specialist and an expert from an international safety consultancy who facilitated the root cause analysis and reviewed the final report. This detailed investigation took almost two months to complete.

One of the findings of the initial investigation led to a further investigation into EGA's preparedness for emergencies and our business continuity management process. This investigation was led by third party experts in these fields.

The findings of our investigations resulted in a comprehensive review of our risk assessments and an overhaul of our operating procedures, associated controls, emergency response plans, emergency drills, audit approach, capability building and competency evaluation.

Colleagues of the men involved in the incident received counselling.

Our underlying safety performance in the UAE improved in 2018. Our total recordable injury frequency rate decreased by 14 per cent compared to 2017 and was the lowest in EGA history. Our work to improve our safety performance in 2018 included:

- 'Safety I care' – a programme focussing on why people should work safely
- Continued training on the Life Saving Rules for all employees and contractors
- An increased focus on reporting of all incidents and improving the quality of investigations in order to prevent incidents in future



**Safety and well-being are both critical to EGA's success as a company. We are committed to a safe and healthy work environment for our employees, vendors, contractors, visitors and communities. We maintain a zero-harm vision for all our health and safety programmes across EGA. Health and safety are both core components of EGA's vision which is to achieve a safe, happy and sustainable workplace.**



**ZUBAIR MAJEED**  
Safety Manager

In 2018 no other colleagues suffered a high consequence work-related injury<sup>54</sup>. All of the occupational injuries encountered by our colleagues were recoverable with staff able to return to work after a suitable recovery period.

<sup>54</sup> High consequence work-related injuries refer to injuries that are non-recoverable (such as amputation) or from which a full recovery is not expected within 6 months.



## LEAF Campaign

Case study

LEAF stands for "Let's Eliminate All Falling Hazards". This campaign was focused on improved controls and awareness of hazards associated with working at height. The campaign was led by our power department, supported by our safety team and was aimed at both staff and contractors. The campaign led to a significant increase in hazard identification and reporting.



## Hand and Fingers Campaign

Case study

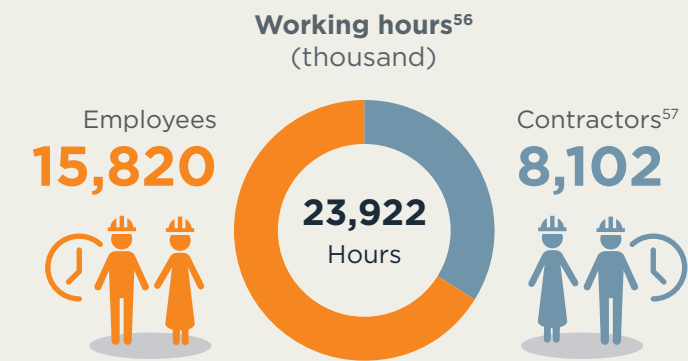
Hand and finger injuries are the most common injury across all of our operational areas and projects, with many activities occurring by hand. In 2018 we ran a hand safety campaign including training sessions on risks specific to EGA's work activities and prevention.



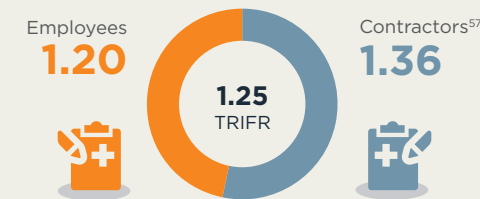


Figure 21: Safety performance statistics

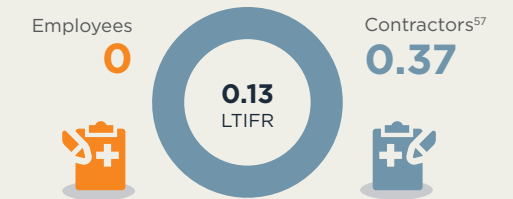
UAE operations and projects safety statistics<sup>55</sup>



**Total Recordable Injury Frequency Rate (TRIFR)<sup>58</sup>**



**Lost Time Injury Frequency Rate (LTIFR)<sup>59</sup>**



**Total recordable injuries**



**Lost Time Injury (LTI) excluding fatalities**



<sup>55</sup> Including Jebel Ali smelting and casting, Al Taweelah smelting and casting and Al Taweelah alumina refinery.

<sup>56</sup> Working hours have been calculated according to total hours paid.

<sup>57</sup> Directly supervised contractors only.

<sup>58</sup> TRIFR is calculated per million workhours and includes fatalities, lost time injuries, restricted work injury, illness, medical treatment and, heat related issues.

<sup>59</sup> Number of Lost Work day / Total Work Hours x 1,000,000.

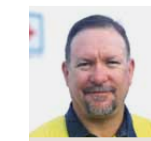


### GAC safety performance

In Guinea we have achieved significant improvements in our safety performance. In 2018 the total recordable injury frequency rate was 2.27 for employees, a decrease of 62 per cent compared to 2017. For contractors, the total recordable injury frequency rate was 0.80, a decrease of 35 per cent compared to 2017. This substantial improvement is attributable to safety campaigns throughout 2018, focusing on positive safety leading indicators as well as embedding a safety culture and practices driven by strong leadership within the organisation.

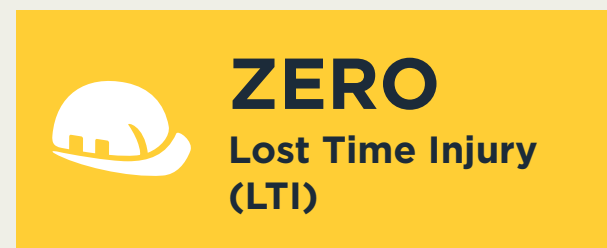
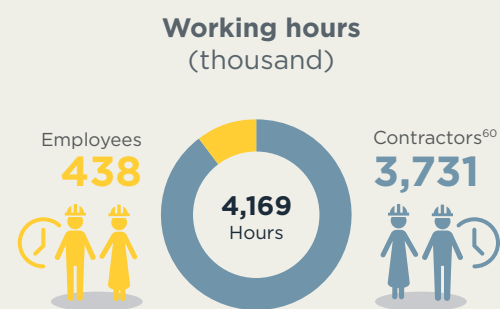
One of the main safety issues in Guinea is road related injuries due to heavy traffic and poor driving on public roads. Road safety campaigns are conducted on an annual basis to minimise vehicle accidents.

Health and Safety is and will always remain, the first priority for everyone at GAC. As we continue our journey of creating a world class bauxite mining and export operation, the goal of ZERO harm is forefront in our mind-set. The improvements made throughout 2018 are one step in that journey. Together, we will continue to develop our culture, skills and systems, as we progress towards making our goal of ZERO harm a reality.

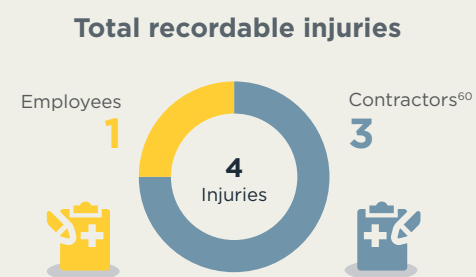
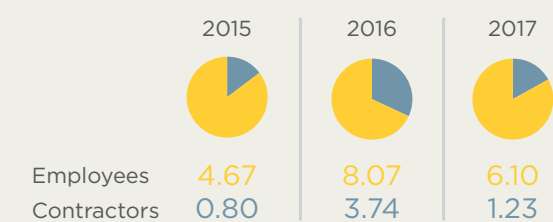
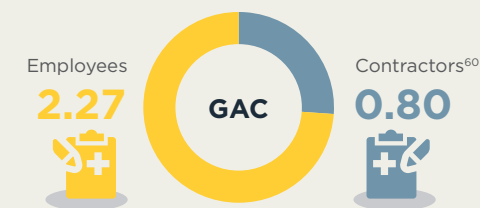


**DERECK JAMES GUILFOYLE**  
Director  
Health, Safety and Environment

### Guinea safety statistics



### Total Recordable Injury Frequency Rate (TRIFR)<sup>61</sup>



<sup>60</sup> Directly supervised contractors only.

<sup>61</sup> TRIFR is calculated per million workhours and includes first aid case, medical treatment case and lost time injury.

## Health performance in the UAE<sup>62</sup>

We operate our own clinics in Al Taweelah and Jebel Ali run by qualified doctors, nurses and emergency medical technicians where we assess and attend to the health of our employees. Services at our clinics are made available to family members of our employees and contractors.

At our clinics we provide all new starters with a medical examination including blood tests, eyesight examinations and hearing checks. We conduct regular check-ups to ensure our staff remain fit and well and to identify any early signs of ill health. In 2018 we provided more than 3,300 medical check-ups to employees.

Heat related illness is a common risk for industries working with molten metal, especially in hot climates. In the UAE, heat related illness is classified as an 'occupational disease'. In 2018 we recorded two instances of occupational disease, both of which were heat related illness.

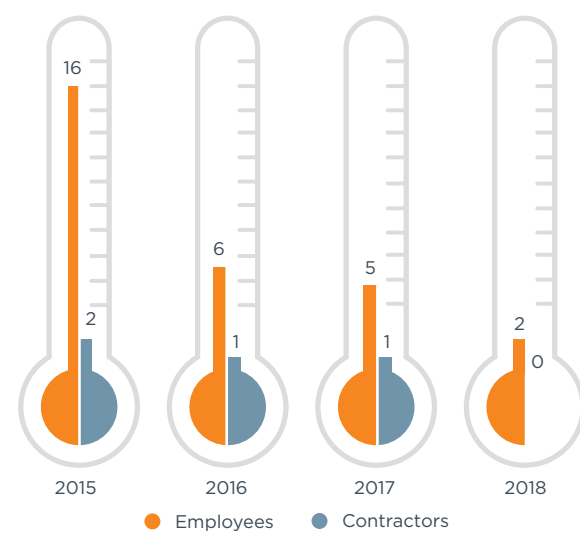
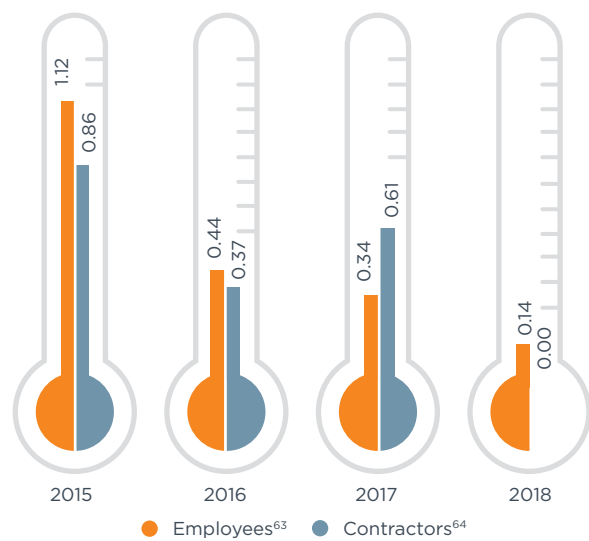
Our goal is zero cases of heat related illness. We have decades of experience of managing working safely in hot conditions, controlling exposure times and making sure our employees stay hydrated.

Health and hydration awareness campaigns increase during the summer time in the UAE, reminding our employees to stay healthy and fit for work. In 2018 we conducted more than 26,000 hydration tests to ensure our employees remained suitably hydrated.



Figure 23: Heat related illness cases in the UAE

Figure 22: Occupational Disease Rate (ODR) in the UAE



<sup>62</sup> Management approach and reference to occupational health and safety management system certification is provided in the safety section.  
<sup>63</sup> ODR is calculated per million workhours. All the occupational disease cases are heat related illness. These figures contribute to EGA's TIRFR in the safety section.  
<sup>64</sup> Directly supervised contractors by EGA management.

## Health promotion campaigns in the UAE

EGA's health and hygiene department runs a number of awareness campaigns and programmes in the UAE to enhance the physical and mental well-being of our employees. In 2018 we conducted three main campaigns:

- **"Sit less and move more"** – an awareness campaign to encourage a healthier office work environment
- **"EGA Health Week"** – a week-long campaign to promote healthy lifestyles with medical check-ups, yoga sessions, awareness lectures and a blood donation drive
- **"Beat the Heat"** – our heat related illness prevention campaign during the summer

“Taking care of people’s health and well-being will always be a priority. We are committed to monitoring and ensuring the health of our employees and of those who work with us.”



## Vitamin D campaign

Case study

Vitamin D is essential to maintain healthy bones and the overall body function.

According to the International Osteoporosis Foundation (IOF) despite ample sunshine in the Middle East, the proportion of UAE residents who suffer from Vitamin D deficiency is high by international standards<sup>65</sup>. Therefore EGA hosted a Vitamin D awareness day for employees and their dependants, which included testing for Vitamin D levels.

<sup>65</sup> Details available at: [https://www.iofbonehealth.org/sites/default/files/PDFs/Vitamin\\_D\\_MEast\\_Africa.pdf](https://www.iofbonehealth.org/sites/default/files/PDFs/Vitamin_D_MEast_Africa.pdf)

## EGA Health Week

Case study

In 2018 EGA hosted another health week initiative at both Jebel Ali and Al Taweelah sites for all employees and contractors, promoting active, healthy and happy living. Our health team created a full week schedule of outdoor activities and programmes including a walkathon, dental checkups, yoga and pilates sessions, mental health and prostate cancer awareness.



## Health performance at GAC

In Guinea we operate on-site clinics in both Kamsar and Tinguilinta, staffed by qualified doctors and nurses. Our principal mining contractor also operates a fully equipped clinic on our mine site. Services at our clinics include first aid training and medical consultation on both chronic disease and healthy living. The International Red Cross provide first aid training to employees and contractors. In 2018 we continued to record zero occupational disease rates amongst GAC's employees and contractors.

Our clinics operate an emergency response service which is available for everyone on our site and is extended to nearby communities. We have partnering agreements in place with in-country medical centres such as the Anaim Hospital in Kamsar and the Clinique Ambroise Pare in Conakry. We have contracted an international emergency medical evacuation service which is available for serious cases. Regular travellers are provided with medical screening and check-ups upon their return to Guinea.

GAC's medical team regularly conducts visits to our project sites and local communities to inspect hygiene levels and promote healthy lifestyles. Our medical service provider tracks any international disease outbreak or major health concerns that could affect the region in which we operate. Further to this we track any health issues within Guinea and the region through the Guinea National Health Department.

Malaria is endemic to Guinea, and GAC has a comprehensive control programme to reduce this risk including mosquito fogging, larviciding, standing water prevention as well as the provision of mosquito nets and awareness programmes for all personnel. All of our clinics are equipped with detection and treatment equipment and medication. We respond to any suspected case of malaria among our employees or contractors and routinely monitor malaria rates in the region in order to track the degree of risk.

## Employee Assistance Programme

We recognise that personal matters such as financial and family issues can affect the health, safety and well-being of our employees. We provide a confidential, professional support service called the Employee Assistance Programme<sup>66</sup> which is available to everyone who works for or with EGA. The Employee Assistance Programme includes:

- 24 hour a day access to independent and anonymous counselling services
- Support for any legal or financial related concerns
- Support for managers and supervisors on managing crises and difficult employee concerns
- An online library of wellness related information in a variety of languages
- Critical incident stress management support including independent and anonymous counselling



# YOUR TRUSTED SUPPORT

## Employee Assistance Programme

Employees may access services from any of the three call centers.

**For services in UAE, call:**  
8000.4440.790 8000.3570.2579 (mobile)

**For services in India, call:**  
8000-3570-4410 (+919818711035 landline)

**For services in the Philippines, call:**  
8000-3570-4416 (+63 23953309 landline)

Outside UAE, India, Philippines,  
reverse charge call +1.312.595.0074.



## Health promotion campaigns in Guinea

In 2018 we ran a number of health awareness campaigns in Guinea including the following:

- Malaria bite prevention
- Hypertension awareness
- Prostate and breast cancer awareness
- Emotional health/depression signs recognition
- Heart disease signs
- First Aid
- Risks of smoking
- Healthy physical activities
- Healthy food habits and hygiene

These campaigns were delivered through practical training courses, toolbox talks and one-to-one tutoring sessions.



## Towards healthier hearts

Case study

In 2018 a heart disease awareness campaign and training sessions were run at our project sites in Guinea. Employees and contractors were familiarised with heart attack signs and trained on using the automated external defibrillator to provide first aid in cases of cardiac arrest. We provided the training in various languages including English, French, Chinese and Hindi, training more than 200 people.



<sup>66</sup> Made available to contractors and employees.

## Engaging with our communities

Heavy industry, including activities associated with aluminium production, can benefit nearby communities through the creation of employment and other economic opportunities and by spurring local development. It can also have negative impacts that disrupt local life.

As part of EGA's core policy, we respect our neighbours and are committed to positively engaging with the local communities where we operate. We aim to maximise the benefits of our presence while mitigating potential adverse impacts.

We operate planned and targeted corporate social responsibility programmes at all of our locations in both the UAE and Guinea, working with numerous stakeholders including community representatives, non-government organisations, educational institutions plus respective governments.

In Guinea we have long recognised that the development of our mining operation would result in land use changes and disruption to some of our neighbours. We have actively sought to minimise these impacts but when they are unavoidable, we have developed and implemented plans to alleviate or compensate.

Positive impacts are planned and pursued, by generating employment of local people wherever possible on our projects, making infrastructure improvements, implementing educational programmes and encouraging economic growth. All of our community impact assessment and project planning in Guinea has been done in accordance with the International Finance Corporation Performance Standards. Any associated studies, engagements plans, community investment strategies, closure and rehabilitation requirements, policies and reports are made publically available on the IFC website<sup>67</sup>.

In the UAE we have an in-house dedicated corporate social responsibility team that actively and regularly engages with local communities in order to gather feedback and understand how we can best contribute to the community. Active engagement is conducted through various channels including regular public meetings.

A recent corporate social responsibility focus has seen us contribute to educational programmes, particularly encouraging young people to study and ultimately pursue careers in science, technology, engineering and mathematics.

## Community engagement programmes in Guinea

In Guinea some parts of our mine concession area and the land required for port, rail and other infrastructure, overlapped with pre-existing villages and communities. Consequently our project required the resettlement of more than 270 households. Land acquisition, compensation, community engagement and resettlement plans were all prepared in accordance with IFC Performance Standards to ensure that any disruption was minimised and people's lives were not adversely affected. We have been open and transparent with the process, engaging with communities in advance to ensure we meet their needs, while making all plans publically available via the IFC<sup>68</sup> and GAC websites<sup>69</sup>.

We established a Resettlement Committee to engage with affected communities throughout the resettlement planning and implementation process. The Committee's main role has been to involve affected people and traditional authorities throughout the resettlement process, in identifying resettlement sites and vulnerable people, witnessing compensation payments and advising on the resettlement site planning and housing design.

In 2018 we conducted 14 community engagement forums in potentially affected areas. At each one we informed community members on the progress of our project, plans for community improvement initiatives, potential for foreseen impacts, proposed mitigation efforts and gave the opportunity for feedback. In total 608 community members participated.

From January 2017 to June 2018 two resettlement projects were completed, one at Tinguilinta associated with the mine concession area and the other in Kamsar associated with the planned port. Prior to resettlement we constructed a new community containing 325 houses for 2,500 people, working closely with community members during and after the resettlement to ensure that all were comfortable in their new homes. We also constructed a healthcare centre for a community from Hakoundé Thiandi, which had been relocated at an earlier stage of the project. This facility can serve up to 1,400 individuals from nearby communities. GAC also built a three-classroom school and a multipurpose centre in this resettled community.



<sup>67</sup> For more information, please visit: <https://disclosures.ifc.org/#/projectDetail/ESRS/24374>



<sup>68</sup> For more information, please visit the GAC IFC Project Information Portal website: <https://disclosures.ifc.org/#/projectDetail/ESRS/24374>

<sup>69</sup> Please visit GAC website through: <http://www.gacguinee.com/en/responsibilities/>

Our relocation projects also establish livelihood restoration measures focused on land-based means of support in line with the rural and agricultural setting of the area. Our aim is to ensure that the living standards and economic opportunities of relocated people are maintained and where possible enhanced as a result of our project. Our livelihood programmes have focused on market gardening, saponification, sewing, hand dyeing, motorcycle taxiing, growing fruit trees and rice production.

In 2018 GAC initiated and funded the Taïgbé Rice Development and Intensification Project with the aim of assisting and improving the livelihood of communities directly impacted by our project. To design and implement this programme we collaborated with the Bureau d'Études de Réalisation et de Conseil Agricole (BERCA), an organisation in Guinea with extensive experience of similar projects. The project aimed to:

- Conduct a methodical study to identify ways to develop and improve rice production
- Develop and implement a modern rice farming approach for an area of 100 hectares
- Provide training in business management techniques to empower farmers to maximise the economic value of their crops
- Provide mechanical equipment to enhance yields

The project included compensation for the loss of 6.5 hectares of mangrove rice fields due to be affected by our port development. So far the results of the project have exceeded our expectations with rice yields increasing from 700 kg per hectare in 2017 to 3.7 tonnes in 2018.

Our Social and Human Rights Impact Assessments confirmed that there are no indigenous people (as defined by IFC Performance Standards<sup>70</sup>) likely to be affected by our project.

**We are grateful to Guinea Alumina Corporation for keeping their word and for supporting us in the most critical area of our livelihood. The livelihood restoration initiative has especially enabled us to acquire new knowledge and know-how in this vital field on which a dozen of our families depend.**



**GUILLAUME BANGOURA**  
Community member



<sup>70</sup> For more information, please visit the GAC IFC Project Information Portal website: <https://disclosures.ifc.org/#/projectDetail/ESRS/24374>

### Security practices in Guinea

As part of the Human Rights Risk Assessment conducted for our project we considered potential negative interactions between the community and security forces.

Security for our project is provided by both an external security provider and GAC's own security staff, all of whom follow the Voluntary Principles on Security and Human Rights<sup>71</sup>. Crisis scenarios and security responses that could create or exacerbate community tensions are reviewed with adequate mitigation measures planned, to ensure GAC understands its role and that staff are appropriately trained. Training components include relevant Guinea and international laws as well as a commitment to the UN principles concerning the use of force and arms.

### Health centre renovation

In 2018 we renovated the health centre serving the Boké region which is near to our mining concession, providing healthcare to some 75,000 people. This facility provides essential services such as maternity care, disease prevention, vaccination programmes and access to general practitioners. The renovation included building restoration work and installation of new medical equipment. All renovation work was undertaken by a suitable local contractor and was conducted following full consultation with local community representatives including municipal authorities.



<sup>71</sup> Details available at: <https://www.voluntaryprinciples.org/>

### Community infrastructure development

In addition to community engagement and resettlement we have also undertaken a series of community improvement programmes.

We have continued our community improvement initiatives associated with enhanced food security through agricultural development projects that include the development of new farms, training of farmers and development of solar powered watering and irrigation systems. In 2018 in the previously resettled communities of Hakoundè Thiandi and Filima we developed a total of four hectares of market gardens. This included the planting of over 5,000 fruit and shade trees.

### Training initiatives and awareness programmes

We have continued our ongoing training and awareness programmes for local and nearby communities which have included:

- Healthcare and disease prevention (including the distribution of 25,000 mosquito nets)
- Improving employment prospects
- Road safety

In 2018 we provided training and awareness programmes that reached a total of more than 100,000 people.

### Scholarship programme for girls

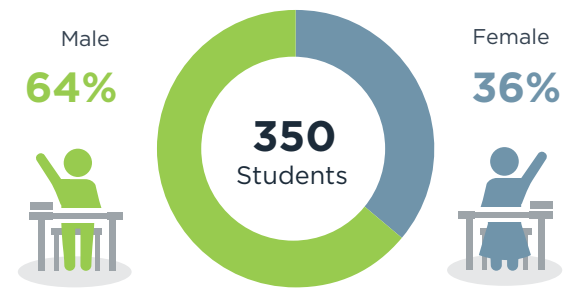
We continued to provide scholarships to girls from neighbouring communities. During the 2017 to 2018 school year our scholarship programme supported ten girls to advance their grade school education.



### Building schools

In 2018 we completed the construction of a new, co-educational school in the community of Tanéné in the Boké region of western Guinea. The school project was developed following feedback from the local community and now educates 350 children, both girls and boys.

Figure 24: Total number of beneficiaries



### Education and youth development programmes

Since 2014 GAC has trained more than 500 young people through an annual vocational training programme that directly supports construction and mining related skills development. The programme aims to support the learning and career development of young people from Kamsar, Boké, Tanéné and Sangaredi. Subjects studied include mechanics, mining operations and masonry. In 2018 some 100 people from local communities participated in this programme.

In 2018 GAC initiated Project 150, a vocational training programme designed to prepare students for professional life and provide specialised training in mining logistical operations, with a view to increasing prospects for employment in the mining sector. The programme included classroom sessions, on the job training and post programme assistance. In total, 150 people benefitted from Project 150 which ultimately aims to develop competent and skilled technical and operating personnel amongst local communities.

In 2018 we also conducted a Functional Literacy and Income Generation Programme which also focused on the management of compensation income associated with our project. It included aspects of financial management, preparing community members to receive compensation payments. In total we reached 150 adults with this training programme.

As part of GAC's community based Capacity Building Programme we continued to conduct an office computer training programme. In 2018 it reached 60 young participants. The training programme includes the fundamental elements of Microsoft Office such as Word, Excel, PowerPoint as well as general Internet use. It is designed to enable young graduates to be competitive when seeking job opportunities that require computer knowledge.

“ If all the mining companies were making the same efforts as Guinea Alumina Corporation the youth unemployment rate would go down a lot in this area. ”



**ABDOUL KARIM CONDE**  
Director  
Boké Vocational Training Centre

“ The Project 150 training programme is set out to ensure not only the availability of a workforce with suitable skills to support a smooth transition of the project from construction to operations, but also to equip young Guineans with know-how and highly needed skills in the mining sector. More broadly, this is also an important foundation for our national economy. ”



**THIERNO DOUMBOUYA**  
Superintendent  
Engineering and Reliability





## Community engagement programmes in the UAE

### Community infrastructure development

In the UAE we continue to contribute to improving the quality of life in our neighbouring communities. In 2018 we signed an agreement with Abu Dhabi Municipality to build a football field in Al Samha near our Al Taweelah site to provide more green outdoor space and encourage a greater uptake in sports in the community.

The development of the 1,230 square metres site commenced in 2018 and is due to complete in 2019.



### Education and youth development

Education is one of the UAE Government's top priorities in its drive to develop a diversified knowledge-based economy. In line with the goals set out in the 'UAE Vision 2021' to ensure inclusive and quality education in support of the knowledge-based economy's development, a significant corporate social responsibility focus in the UAE has been youth development and education. In 2018 we continued our successful partnerships with the Ministry of Education, Edutech, INJAZ UAE, the American University of Sharjah. We have also worked closely with Action Care, an educational training provider in the UAE and GCC region, plus collaborated with Emirates Environmental Group to raise awareness of environmental issues in local schools.

### Engineer the Future

Engineer the Future is a science, technology, engineering and mathematics outreach programme targeting high school students. It aims to encourage young people to consider further studies and careers in these fields, collectively known as STEM, through interactive workshops and practical projects.

### School outreach programme

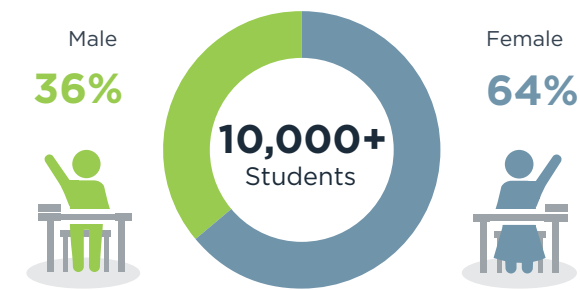
We launched the programme in 2017, collaborating with the Ministry of Education and Edutech to promote awareness and understanding of science, technology, engineering and mathematics related subjects within UAE high schools. In 2018 we continued to implement this programme which aims to:

- Encourage greater interest among local UAE students in STEM subjects at school
- Contribute to more UAE nationals pursuing further education STEM subjects and considering STEM careers
- Bridge the gap between classroom learning and the real-world application of STEM knowledge in industry
- Aid improved learning outcomes through hands-on learning activities
- Contribute to Emiratisation of STEM professions in the UAE

During the 2017-18 academic year we reached over 10,000 students from 26 schools across the UAE. Notably attendance was greater among female students than male students – 64 per cent of participants were girls. This is encouraging given that globally enrolment in STEM related subjects is often skewed towards male students.

The programme is continuing during the 2018-19 academic year. Again female students are making up nearly two-thirds of participants.

Figure 25: Number of students reached



### Motivated empowerment programme

In 2018 we engaged with Action Care, an educational training provider in the UAE and GCC region, to help deliver a motivated empowerment programme also known as MOVE. EGA's contribution included designing classes around a career, plus personal skills development, along with opportunities for students to improve their English. Each class took place over a span of two school periods to ensure students had ample time for the topic to be explored. These classes included interactive elements, task-based learning and discussions that required critical thinking and allowed students to put new concepts into practice. A total of 70 students participated with 11 employees from EGA volunteering to take part.

### INJAZ UAE

INJAZ UAE is a member of Junior Achievement Worldwide, one of the world's largest not-for-profit business education organisations, reaching over 10 million students each year in 121 countries. It serves as a link between the business community, educators and volunteers, working together to empower young people to plan their professional futures and make smart academic and economic choices.

EGA partners with INJAZ to support and organise its work readiness programme which aims to equip students for the first stages of their career. In 2018 EGA hosted five innovation camps at UAE schools and held two job shadowing days that benefitted a total of 333 students. More than 60 EGA employees volunteered from various departments. As with the school outreach programme, we were encouraged by good attendance figures for both female and male students.



## School recycling centres

### Case study

In 2018 we collaborated with Emirates Environmental Group (EEG) to establish recycling centres in schools in the UAE that promote awareness of recycling among students and encourage the habit of segregating waste at source.

We built recycling centres for paper, plastic and aluminium cans at four schools. We also held classes with students to highlight the importance of recycling and outline the benefits that the new recycling centres would bring. The amount of waste recycled from these schools is regularly monitored by EEG and compiled in annual reports which are then shared with the schools to highlight their contribution.



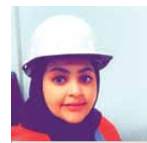
### Volunteering

Our EGA CSR Club is open to any EGA employee who would like to volunteer their time either during or outside working hours. On joining the CSR Club, EGA employees are able to define their interest and members of the club are encouraged to share CSR ideas and opportunities. In 2018, 949 volunteers actively participated in community improvements or engaged with students in our education and youth development programmes.

Figure 26: 2018 Total number of volunteers and man hours in the UAE



Getting involved is a great way to show high school and college students that you take an interest in their education. It also sends a positive message that you consider school a worthwhile cause. Also, volunteering is at the very core of being human. No one has made it through life without someone else's help.



**AMEIRAH KHALFAN RASHED KHALFAN ALKINDI**  
Systems Senior Analyst  
Production IT  
Finance, IT and Strategy

Volunteering with EGA was a very fulfilling opportunity giving me a chance to mentor and guide the future generation via job shadowing. I was very happy to be part of this EGA initiative and due to this positive experience, I am excited to contribute more in the future.



**SAHAR ALAWADI**  
Associate Manager - Plant Analysis  
Midstream  
Finance, IT and Strategy

### Community feedback and grievance management

We have a formal grievance mechanism at all of our locations in both the UAE and Guinea, giving everyone within the community the opportunity to raise concerns or queries associated with our environmental and social performance. We intend that our grievance process provides the community with easy access, and enables us to find effective solutions to any complaint quickly.



**Dedicated phone line for community feedback or complaints in the UAE**  
**+971 2 509 4535**

In the UAE we have a dedicated phone line accessible 24/7 with details published on our website<sup>73</sup>. Calls are monitored and picked up by our in-house dedicated corporate social responsibility team. In 2018 EGA in the UAE did not receive any complaints from the community via our dedicated phone line.

Nevertheless, community concerns were identified and addressed through active public engagement. Concerns raised were primarily associated with dust from the roads near communities.

In Guinea our stakeholder engagement team manages all complaints through our grievance mechanism recorded via Borealis, which is a proprietary software package for managing community engagement used on our GAC project. We register all complaints and investigate them to understand needs and find the best solution to resolve issues promptly. We regularly tell our stakeholders about our grievance mechanism and associated procedures.

In 2018 GAC received 49 grievances, 47 of which were substantiated and closed out by the end of the year. Substantiated grievances were mainly associated with compensation, expectations regarding employment opportunities and environmental concerns such as blasting and dust. Our target is to address substantiated complaints within 14 days.

### Embedding ethical practices

At EGA we believe that good ethics are the foundation of good business. Unethical behaviour can severely damage the trust stakeholders place in an organisation and compromise its ability to meet its objectives.

We are committed to embedding ethical practices throughout our business and seek to build mutual trust with our customers, suppliers and communities by working honestly and ethically.

EGA implements a risk-based ethics and compliance programme which reflects the specific challenges encountered in the countries and industries in which we operate. We apply the same standards across all areas and geographies and continue to look for ways to improve how we detect, prevent and respond to compliance issues.

Our in-house legal and compliance department implements EGA's compliance programme and oversees risk identification and associated controls across all of our operations.

We promote the idea that everyone is responsible for compliance and for fostering an ethical culture at EGA.



### EGA's Code of Conduct

EGA's Code of Conduct establishes and communicates the standards that guide our behaviour.

Our Code of Conduct applies to everyone at EGA and covers 24 compliance issues. These include treating people with respect (prohibiting harassment, discrimination and retaliation), anti-bribery and corruption, complying with competition laws and behaving with integrity in all dealings with customers, partners, suppliers and governments<sup>74</sup>. Our Code of Conduct is available on our website<sup>75</sup>.

### Anti-corruption and anti-bribery

EGA takes anti-bribery and anti-corruption compliance seriously and recognises the high levels of risk in some of the countries in which we operate. Bribery not only undermines the rule of law and the principles of free and fair competition, but also has a stifling effect on businesses and commerce.

In 2018 we introduced a standalone anti-bribery and anti-corruption policy that complements our Code of Conduct and includes clear guidance about the offering and accepting of gifts, hospitality and entertainment, donations and dealings with third parties including government officials.

Regular risk assessments are a key part of an effective compliance programme. Guinea remains a high-risk business environment in relation to bribery and corruption, although the country improved its ranking in Transparency International's 2018 Corruption Perception Index<sup>76</sup>. All our operations in the UAE and Guinea have been assessed for risks related to bribery and corruption. In 2018 we also refreshed anti-corruption and bribery risk assessments in Guinea and our office in Shanghai.

<sup>72</sup> The number of volunteers in 2018 includes some of EGA's contractors.

<sup>73</sup> For more information, please visit: <https://www.ega.ae/en/contact-us/>

<sup>74</sup> EGA does not involve itself directly or indirectly with any form of political or electoral activity

<sup>75</sup> <https://www.ega.ae/en/about-us/our-policies-and-certifications/>

<sup>76</sup> For more information, please visit <https://www.transparency.org/cpi2018>

## Communication and training

Code of Conduct training is mandatory for all staff and is delivered as part of the induction process. This training introduces EGA's ethics and compliance programme including compliance issues, the multiple ways to report compliance concerns and our non-retaliation policy. All employees are required to complete a refresher Code of Conduct training on an annual basis.

Annual Code of Conduct training focuses on different topics each year. In Guinea in 2018, the annual training included a module called "Stand-up to Bribery and Corruption".

In December 2018, to coincide with International Anti-Corruption Day, our senior managers in Guinea delivered anti-corruption messages in their toolbox talks with staff.

In Guinea we also extend compliance induction training to a number of contractor staff to increase awareness of our values and Code of Conduct and to encourage anyone to speak-up if they suspect any illegal or unethical conduct.

EGA's anti-corruption policies and procedures have been communicated to all of our staff, including our Executive Committee. In 2018 our Executive Committee members received ethical leadership training and subsequently led personalised training sessions on ethical leadership for their respective teams.

EGA's values and commitment to integrity also shape the expectations we have for our suppliers. We require all suppliers to sign a supplier declaration or provide comparable assurances that they comply with EGA's values and standards, including prohibitions on all forms of bribery and corruption. We conduct basic due diligence on all of our suppliers, with a greater level of scrutiny for those considered high-risk.

## Our response to incidents of discrimination and harassment

In 2018 our compliance team recorded a total of 43 cases of "lack of respect, including harassment and discrimination". On investigation 15 of these cases were substantiated. Remedial actions have been completed for all substantiated cases and have ranged from counselling and training to formal disciplinary action.

## Our response to incidents of corruption

In 2018 our compliance team recorded a total of 13 incidents of alleged corruption. On investigation five of these cases were substantiated. Two of these substantiated incidents of corrupt behaviour involved EGA employees. The other three involved entities outside of EGA.

In the first substantiated incident, three EGA employees were found to be in breach of our Code of Conduct. Following the application of EGA's Employee Grievance and Disciplinary Operating Policy, the case was determined to be severe enough to warrant the dismissal of the three employees involved. In the second substantiated incident, an employee in the UAE resigned after self-reporting that they had breached EGA's Code of Conduct.

Of the three substantiated incidents that did not involve EGA employees, we referred two of these incidents to the appropriate authorities, given their severity. The third incident involved a facilitation payment by the employee of a contractor. Subsequently we increased awareness training with this contractor to improve understanding of what constitutes bribery and corruption and EGA's requirements for ethical business practice.

None of the above incidents of corruption had any material impact on the business and operations of EGA.

## Our compliance performance

EGA's compliance team investigates all concerns that are reported, either directly or through our 'Your Voice' reporting line. In 2018 we received 190 reports.

In 2018 we did not identify any breaches to our Code of Conduct or legal violations warranting contract termination with any of our business partners.

Also in 2018 we did not receive any fines, judgements, penalties or non-monetary sanctions for non-compliance with laws and/or regulations. We had no legal actions, threatened or ongoing, regarding anti-competitive behaviour or corruption and no violation of anti-competitive behaviour or anti-trust and monopoly legislation.

In 2016 we received a notice of violation from the environmental regulator Dubai Municipality regarding NO<sub>x</sub> emissions from our power plant at Jebel Ali. These emissions are associated with older gas turbines that were installed before the implementation of relevant emission regulations in the Emirate of Dubai. Please refer to Section 4 of this report, Environmental and social responsibility, for further details regarding our NO<sub>x</sub> emissions and planned improvements.

“  
**At EGA, compliance is much more than just documented guidelines or mandatory training. We have worked hard to embed a culture of compliance so that ethical behavior and integrity are part of who we are. In the legal and compliance team, our door is always open to anyone and everyone working for or with EGA.**  
”



**JOANNE LESLEY NORMAN**  
Legal Counsel  
Legal and Compliance



## Your Voice

We encourage people to speak up if they have any compliance related questions or concerns. 'Your Voice' is an independently operated reporting line that allows our employees, suppliers, contractors and others to report any possible violation of EGA's Code of Conduct, policies or applicable laws. It is available 24/7 in multiple languages and publicised within EGA and also appears on our website and supplier declaration.

 **8000 021** (UAE toll-free)  **8123** (Guinea toll-free)

We have a strict policy of non-retaliation. Anyone reporting a concern in good faith is assured that they will be supported, regardless of the outcome of their report.





# 05



**Creating opportunities for people**

Jobs for modern lives



# Creating opportunities for people

## Our employees

At EGA our business success depends on the talent, skills and diligence of our people. We aim to attract high quality recruits, provide effective opportunities to enable them to reach their full potential and retain the most capable people for the long term by providing competitive remuneration and welfare.

EGA is dedicated to the development of all employees. This includes giving appropriate attention to the development of nationals in the countries in which we operate. In both Guinea and the UAE, increasing the proportion of nationals in the workplace is a key business objective. EGA's Emiratisation and Guineanisation programmes are designed to attract, develop and retain UAE and Guinean nationals, providing clear progression pathways through structured development and training programmes.

In the UAE, of our 7,195 employees, 1,174 are UAE nationals. In Guinea, of our 300 employees, 225 are Guineans. In Guinea we also give hiring priority to the working population directly impacted by our projects wherever the right skill set is available. We are also pioneering the role of UAE national women in heavy industry. In 2018 more than 19 per cent of supervisory and managerial roles were held by women.


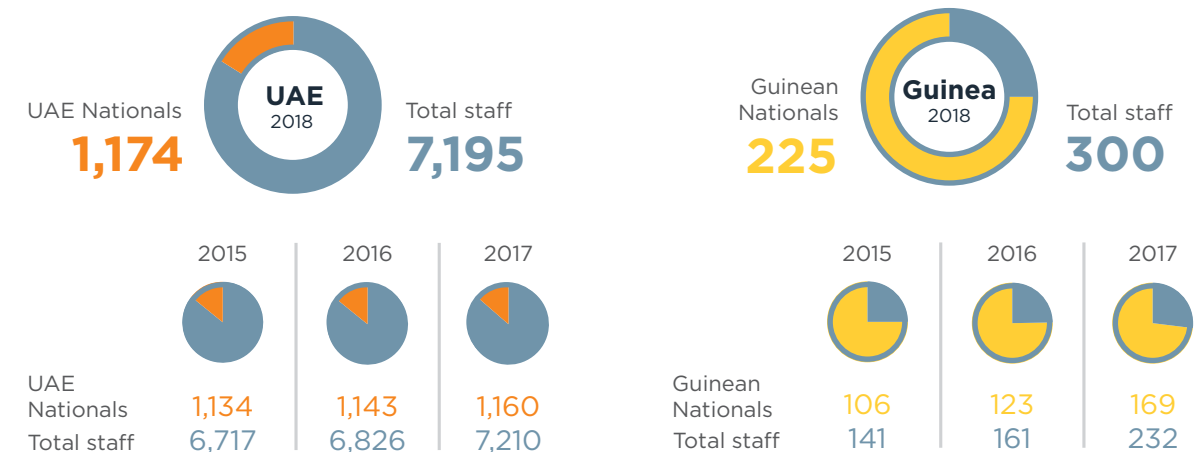
 **7,100+** people from over 60 different nationalities

Figure 27: Supporting local recruitment



 **19%+** supervisory and management roles held by women in UAE

 **75%** Guinean nationals



Figure 28: Employee diversity in the UAE



Senior management hired from the local community<sup>77</sup>



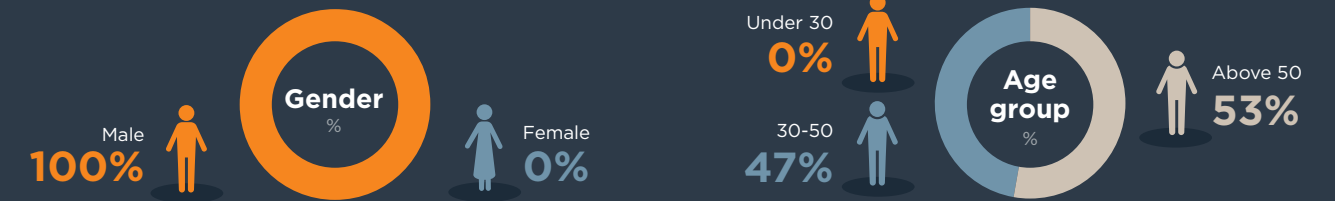
Total number of employees by gender in 2018



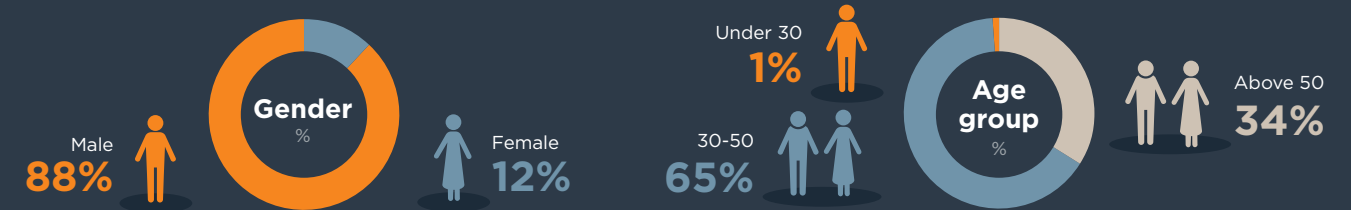
<sup>77</sup> Programmes to attract, develop and retain nationals are considered contributions to local community.  
<sup>78</sup> Senior Management is grades F and above and excludes Executive Committee.

Employee category in 2018<sup>79</sup>

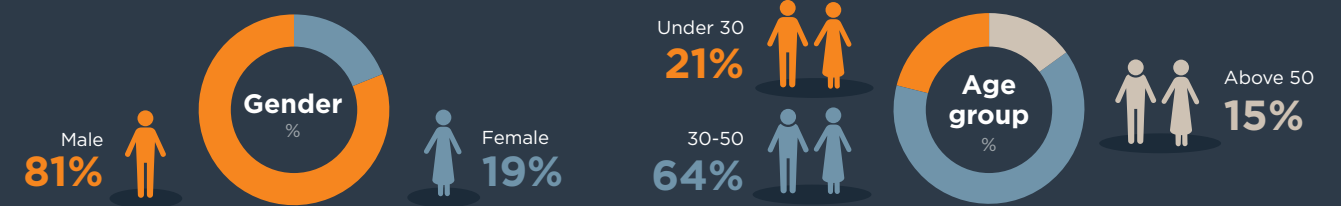
Executive Committee



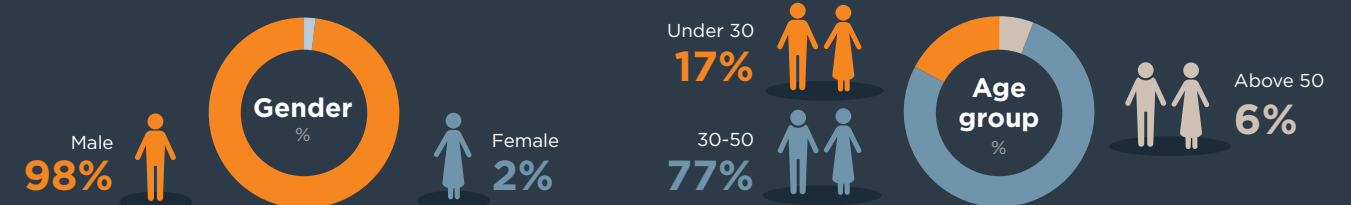
Senior management (excluding Executive Committee)



Middle management



Staff



<sup>79</sup> No part time employees during the reporting period. There are 6,754 full-time male and 441 female employees during reporting period.

Figure 29: Employee diversity in Guinea



Senior management hired from the local community



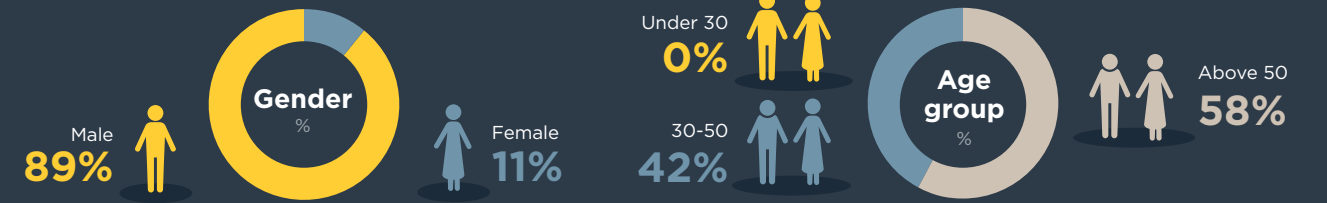
Total number of employees by gender in 2018



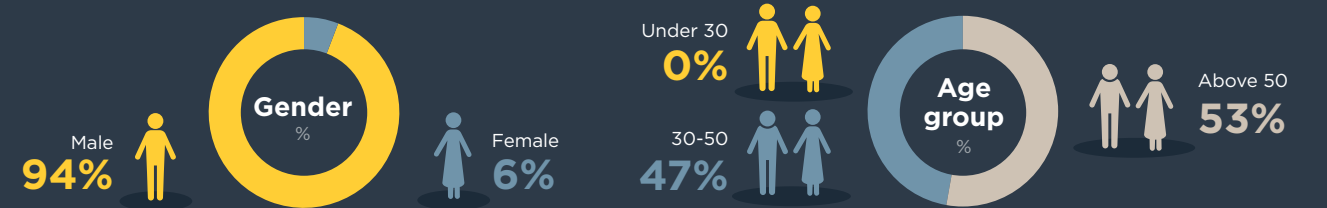
<sup>80</sup> Senior Management is grades F and above and excludes Executive Committee.

Employee category in 2018<sup>81</sup>

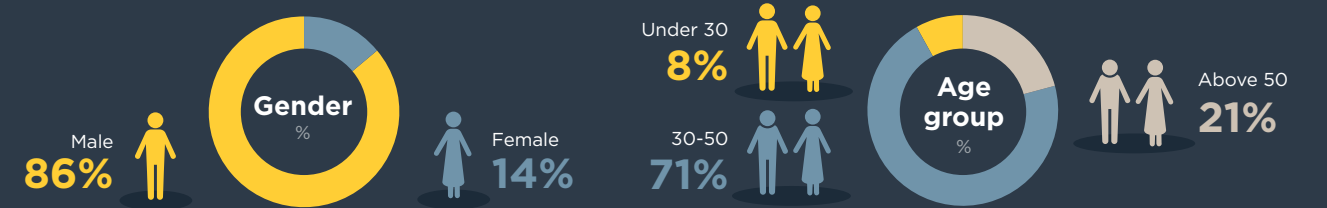
Executive Committee



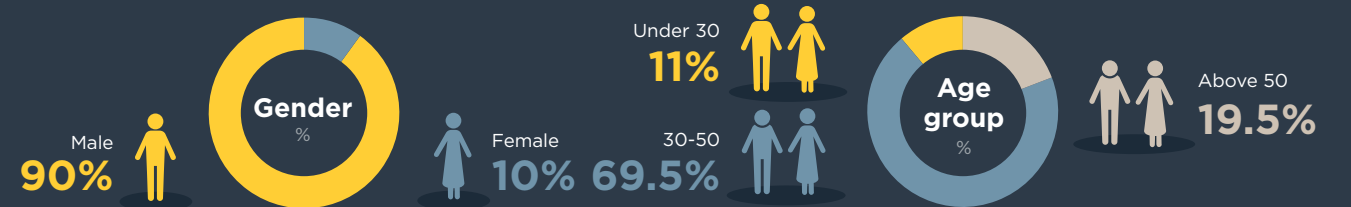
Senior management (excluding Executive Committee)



Middle management

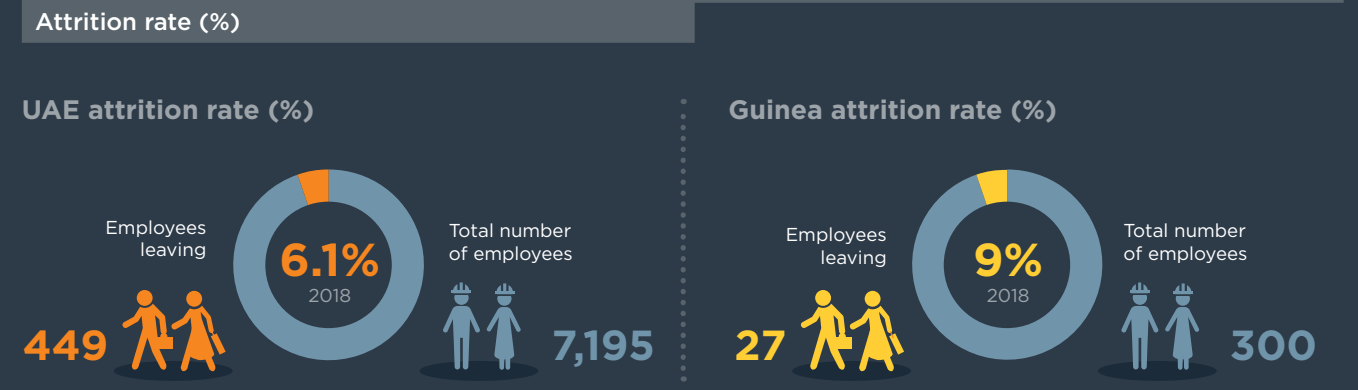
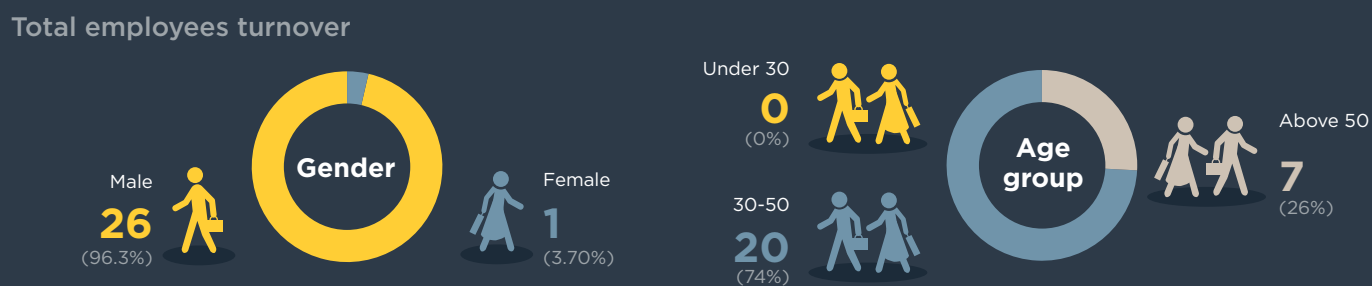
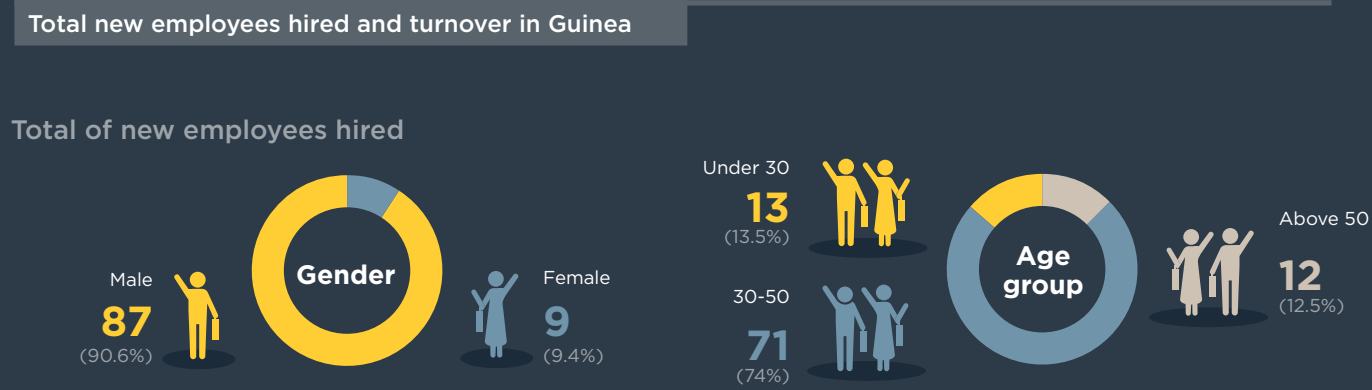
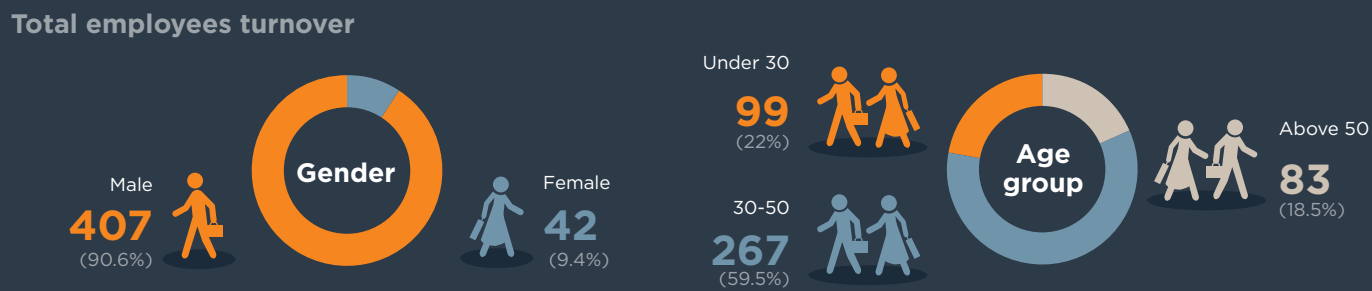
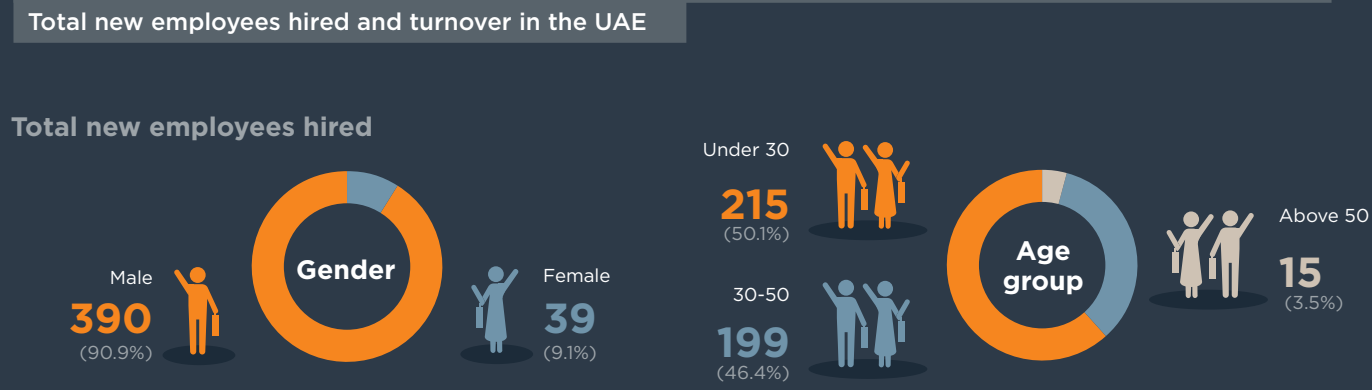


Staff



<sup>81</sup> No part time employees during the reporting period. There are 262 full-time male and 38 female employees during reporting period.

Figure 30: Employee retention



Freedom of association and collective bargaining are restricted under UAE Law<sup>82</sup>. However, at all of our project sites, operations and offices, we support open dialogue and actively encourage colleagues to raise any concerns or opportunities to improve the working environment and the well-being of our staff.

In Guinea our Human Capital policies and procedures are aligned with International Labour Organization and IFC Performance Standards. The majority of our employees are members of one of the national trade unions for the mining sector and 74 per cent<sup>83</sup> of GAC's employees are covered by collective bargaining agreements. GAC has established a rapport with the unions in the company and meets their representatives monthly to help resolve any work-related issues.

In the UAE we have established a dedicated employee care centre managed by a contracted third party. This facility provides assistance to all our staff and helps resolve queries, concerns or grievances associated with employment at EGA.

We also actively seek employee feedback. In 2016 and 2018 we conducted an employee engagement survey called "Mashura" to enable employees to confidentially give their opinions on a wide range of topics. Findings from Mashura are reviewed by our Executive Committee and targets set to deal with concerns or opportunities for improvements raised by staff.



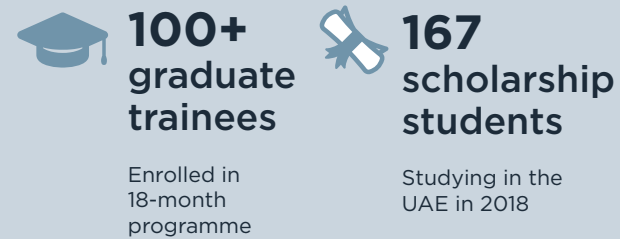
<sup>82</sup> Federal Law no. 3 of 1987 (as amended).

<sup>83</sup> This percentage includes all national employees excluding members of the Executive Committee.



## Leave and benefits

EGA offers a wide range of benefits to employees to ensure their well-being, commitment to work and overall happiness. Our employees receive a school education allowance, life insurance, health care, medical check-ups, disability and invalidity assistance, compassionate leave and medical insurance that covers the employee and their immediate family. Our annual and parental leave policies exceed statutory requirements while many aspects of our remuneration packages compare favourably with industry norms<sup>84</sup>.



## Training and development

Skills development and career planning are facilitated through EGA's Performance Management Framework, which is available to all EGA's staff<sup>85</sup>. Our aim is to provide a challenging work environment and opportunities for employees to reach their full potential, thereby increasing job satisfaction and contributing to employee retention.

EGA provides a wide range of training programmes to thousands of employees every year. Training is designed according to EGA's current and future requirements, current staff needs and planned career progression. All technical training programmes for the operational facilities in Dubai are accredited by the Knowledge and Human Development Authority.

EGA's Emiratisation programme includes internships, summer work experience for high school and university students, the Eadad<sup>86</sup> programme (training opportunities for fixed periods), scholarships for employees and students, national trainee programmes and a graduate trainee programme.

“ Since joining EGA in 1993 I have had many opportunities to develop my industry knowledge. EGA has enabled me to greatly boost my career with a diverse range of exciting and challenging tasks. EGA is people-focused and this has remained strong throughout the company's growth and development.



**JASSIM ALJASMI**  
Senior Superintendent  
Casting Operations

“ Training provided by EGA has been phenomenal and best in class. Over the past 25 years, it has not only helped me to hone my skills but also benefitted my team for their overall intellectual growth.



**ABDULRAHIM AL MULLA**  
Manager Procurement  
Supply Chain



<sup>84</sup> Contract notice periods range from one to three months depending on role.

<sup>85</sup> Staff meet with their line managers to set goals in a performance agreement at the start of each year. Progress and success in achieving these goals is assessed in interim and full-year review meetings.

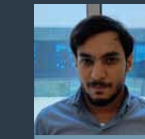
<sup>86</sup> Eadad is an Arabic word meaning preparation.

“ Sharing the success of my educational journey with people that constantly motivate and help me improve was one of the biggest highlights as an EGA sponsored student.



**SARA AL JASMI**  
Graduate Trainee  
Production IT

“ I felt confident throughout my scholarship period with all the support EGA provided me with and I still feel the support as a current employee.



**KHALIFA AL FALASI**  
Graduate Trainee  
Power

Figure 31: Average hours of employee training in the UAE<sup>87</sup>

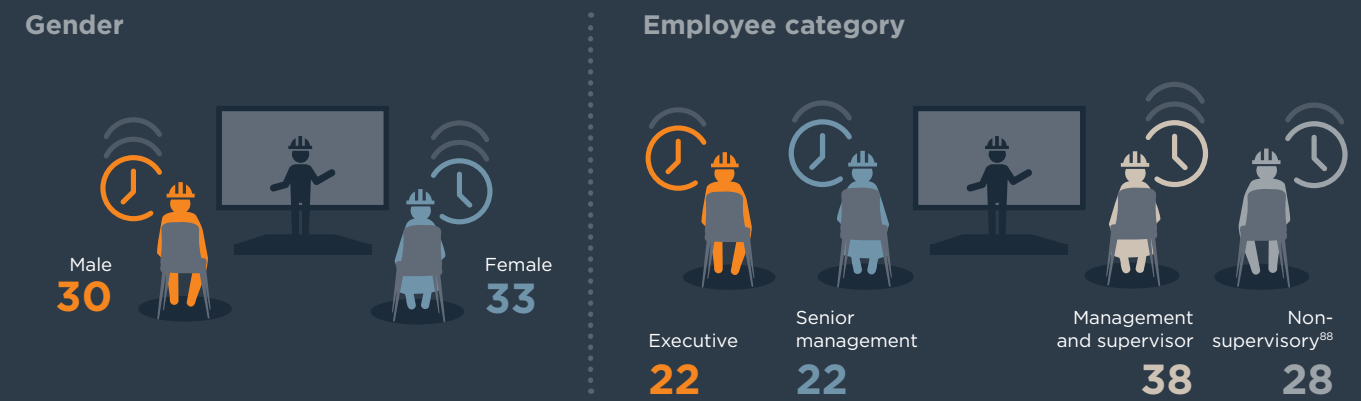
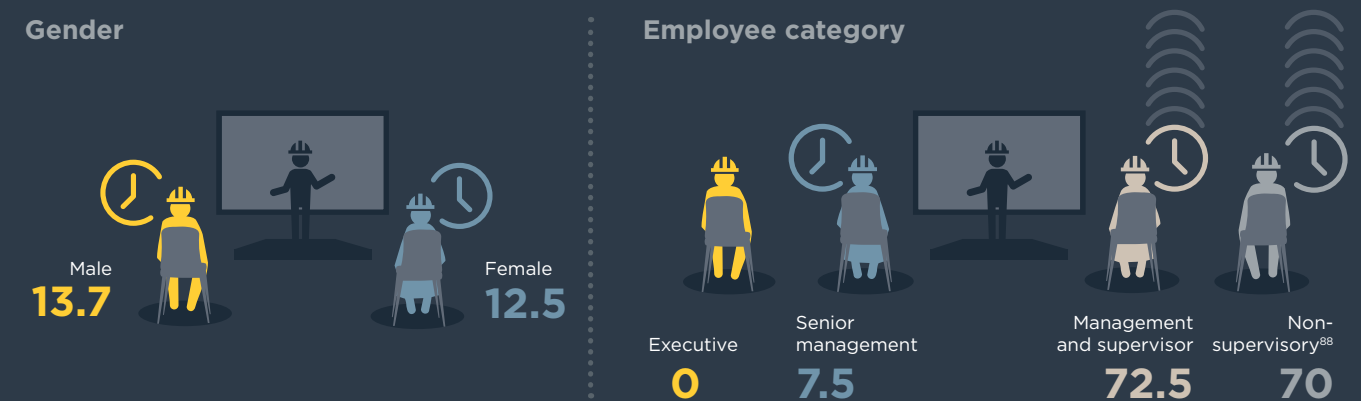


Figure 32: Average hours of employee training in Guinea<sup>87</sup>



<sup>87</sup> Senior management is grades F and above, Management and supervisory is grades K-G, Non-supervisory is grades S-L.

<sup>88</sup> Non-Supervisory (professional and administrative).



## EGA's leadership development programme

Training case study

Ruwaad is the Arabic word for a leader, pathfinder or explorer and the name of EGA's flagship programme to develop employees with potential to assume senior leadership roles in the future. The programme was developed by Oxford Saïd Business School for EGA to build leadership capability, in areas fundamental to delivering EGA's business priorities and plans for growth.

The Ruwaad programme focuses on:

- Exposure to a wider global view, trends and emerging themes using leading academics in their fields
- Enhancing key attributes and competencies required to achieve organisational goals as detailed in EGA's Leadership Expectations Model
- Improving the ability of EGA to make appropriate risk-balanced decisions and understand how to tackle decision-making in broader, more ambiguous and changing contexts
- Increasing self-awareness and emotional intelligence and providing space to explore and practice individual leadership behaviours
- Developing broader business acumen
- Developing skills and an appetite for collaboration and influence
- An ability to take considered decisions and use sound judgement



## Mashura employee engagement

At EGA we value our employees' opinions on the working environment and what we can do to make it better for everyone.

Mashura is an Arabic word meaning, "we value your opinions". It is the name we give to our employee engagement survey which was launched in 2016 and gives employees opportunity to provide feedback and highlight any opportunities for improvement.

In both 2016 and 2018, our Mashura survey was conducted through an external provider that specialises in employee engagement, ensuring confidentiality. The main findings were communicated to the company as a whole. Actions based on these findings are set by EGA's Executive Committee and Board members and are shared with employees through various communication channels.

Feedback during Mashura 2016 helped us plan and implement over 100 actions in EGA to improve the working lives of our employees. These actions included sharing employees' experiences to enhance transparency, establishing the Employee Assistance Programme for all employees, an increased frequency of meetings with organisational leadership and coaching training for managers.

In 2018, we provided the survey in seven languages and gathered feedback from employees in the UAE and Guinea. The survey included 71 multiple choice questions with 17 demographic variables. Main categories included engagement, direction, efficiency, collaboration, safety, senior leadership, line management, EGA values, personal development, retention, facilities, rewards and recognition.

In 2018, 90 per cent of all EGA employees responded to the survey. Results were communicated to all functions and action planning workshops held with the leadership teams of each area. Improvements are underway, with more planned for 2019 including:

- Increased budgets and opportunities for training
- Better communication of strategic priorities among all staff
- Improved leadership visibility and engagement frequency with the rest of the organisation

Leadership teams have communicated the results to their respective areas along with proposed plans for improvement.



## Our residential facilities in the UAE

Our employees come from countries across the world to join EGA. At our site in Jebel Ali, we provide accommodation for more than 2,000 people of various nationalities and cultural backgrounds. Accommodation is provided for both employees and contract staff and we understand the importance of making our residential site feel like home.

We cater for a diversity of tastes and cuisines across our three dining halls and are mindful of cultural and dietary requirements.

Transport to the beaches, malls, restaurants and other recreational attractions across Dubai is provided by a dedicated, free, bus service. We also operate a bus service for employees within our Jebel Ali site and to our Al Taweelah site. To get to work, residents can also choose to use our cycle tracks or landscaped walkways.

Our onsite clinic provides 24 hour access to fully qualified doctors and nurses and is situated adjacent to our residential area. Access is provided free of charge to all residents.



**I have been living in EGA's residential area for almost five years. Life here is fascinating. Being a sports loving person I appreciate having access to so many facilities. Fishing on the beach also has its charm. My favourite part of the day is watching the sunset on the ocean from just outside my room.**



**SAQIB UR-REHMAN**  
Storeman  
Logistics and Warehouse Management



Daily activities, events, regular maintenance and resident care are provided by our onsite facility management team.

Our safety and health teams conduct regular inspections and audits to ensure well-being of all residents and in 2018 we added our residential area to the scope of our Health and Safety Management System. In 2018 we also started a series of quarterly safety workshops, the frequency of these workshops was proposed by the residents, covering topics such as "safety in the home" and "sports injuries"<sup>89</sup>.

We operate a suggestion scheme tailored specifically for the residential area to give residents the opportunity to raise their ideas for improvements. In 2018 we received over 300 suggestions and we subsequently made improvements such as placing a bicycle stand near the mini-supermarket, improving lighting for those on night shifts, increasing landscaping, increasing opportunities for cooking in the barbeque areas, improving visibility of fire assembly points, and installing fans at the bus stop in preparation for the hot summer months. Our Executive Committee makes regular visits to inspect facilities and meet with our residents.



**I am enjoying my life here. I am very happy to say that I am living peacefully here, like home. Thanks a lot to EGA for providing excellent facilities to all employees.**



**CHIDAMBARAM MAHALINGA**  
Senior Technician  
Production Control - Casting Operation



In 2018 we also conducted an Employee Assistance Programme awareness campaign led by Dr Mariam Al Maazmi, one of EGA's qualified health professionals.

### Our residential area includes:

- Swimming pool
- Golf course
- Cricket pitch
- Gym
- Mini-supermarket
- Laundry service
- Travel desk
- 24 hour concierge
- Free wifi
- Allotments
- Football pitch
- Tennis courts
- Basketball court
- Fishing pier



**71%**  
reduction in home  
and sports injuries at  
our residential area  
compared with 2017

<sup>89</sup> Sports, home and similar injuries in our residential area are not considered occupational injuries.

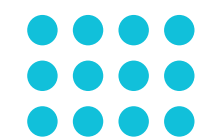


# 06



## Technology and innovation

Contributing to a modern  
knowledge-based  
economy



# Technology and innovation

## Homegrown technology

EGA's in-house research and development division produces technological advancements intended to increase our productivity, reduce resource consumption, lessen our environmental impact and minimise capital and operational cost.

Our current operations benefit from over 26 years of homegrown technological improvement and efficiency measures. In 2018 we filed a total of four patents, bringing EGA's total to 28.

We have used our own technology in every smelter expansion since the 1990s and we have retrofitted all of our older production lines.

Today all 2,777 of our reduction cells use EGA technology enabling us to minimise energy consumption per tonne of aluminium produced and achieve exceptionally low greenhouse gas emissions, particularly PFCs associated with the smelting process.

EGA PFC emissions in 2018 were more than 96% below the global industry average<sup>90</sup>.

EGA (t CO <sub>2</sub> e/t Al)	0.021
GLOBAL AVERAGE (t CO <sub>2</sub> e/t Al)	0.570

<sup>90</sup> International Aluminium Institute was referenced as global industry benchmark: <http://www.world-aluminium.org/statistics/perfluorocarbon-pfc-emissions/#data>

“ Here in EGA we love innovation. We thrive on new ideas that improve our performance and contribute towards our sustainability initiatives. The result of that labour of love is original homegrown technology that competes internationally. I am proud to be part of EGA's Technology Development and Transfer team. ”



**ALYA ALSHAMS**  
Engineer I  
Technology Development  
and Transfer



## Marketing aluminium smelting technology

In 2016 EGA became the first UAE industrial company to license its core process technology internationally. Aluminium Bahrain (ALBA) selected EGA's proprietary DX+ Ultra technology for its new, sixth potline.

Compared with earlier generation cells, DX+ Ultra technology substantially reduces energy consumption. It does so by introducing various voltage drop techniques which address the key energy consumers in a cell.

In December 2018 the first pot at ALBA's Potline 6 was successfully started, confirming EGA as not just a producer of aluminium but also a successful technology exporter. Given this success, our long-term aspiration is to grow this aspect of our business, contributing to improved efficiencies in the industry as a whole and towards the national strategic objective of further developing the UAE's knowledge-based economy.



## Bauxite residue research and development

EGA is preparing to start production at its new Al Taweelah alumina refinery during the first half of 2019. A challenge faced by alumina refineries across the world is finding safe, sustainable, commercially viable productive uses for the primary waste product from the refining process, bauxite residue. Despite extensive research in the industry over many decades, large-scale use remains elusive and storage in specially constructed dams and impoundments remains the only practical means of safely managing the vast quantities of bauxite residue produced annually by alumina refineries around the world.

In 2018 EGA completed a state of the art bauxite residue storage facility in readiness for the start-up of the Al Taweelah alumina refinery. This fully lined storage facility was constructed within an expanse of desert approximately 30km inland from the coast in the Emirate of Abu Dhabi. When the Al Taweelah alumina refinery starts production, bauxite residue will be washed, pressed into a dry cake, and transported to the area for managed storage using a fleet of sealed trucks. The storage site will be progressively sealed and the land re-used for potential projects ranging from warehousing to a solar farm.

EGA's bauxite residue research and development group is tasked with finding long-term applications for EGA's bauxite residue, with the goal of reducing

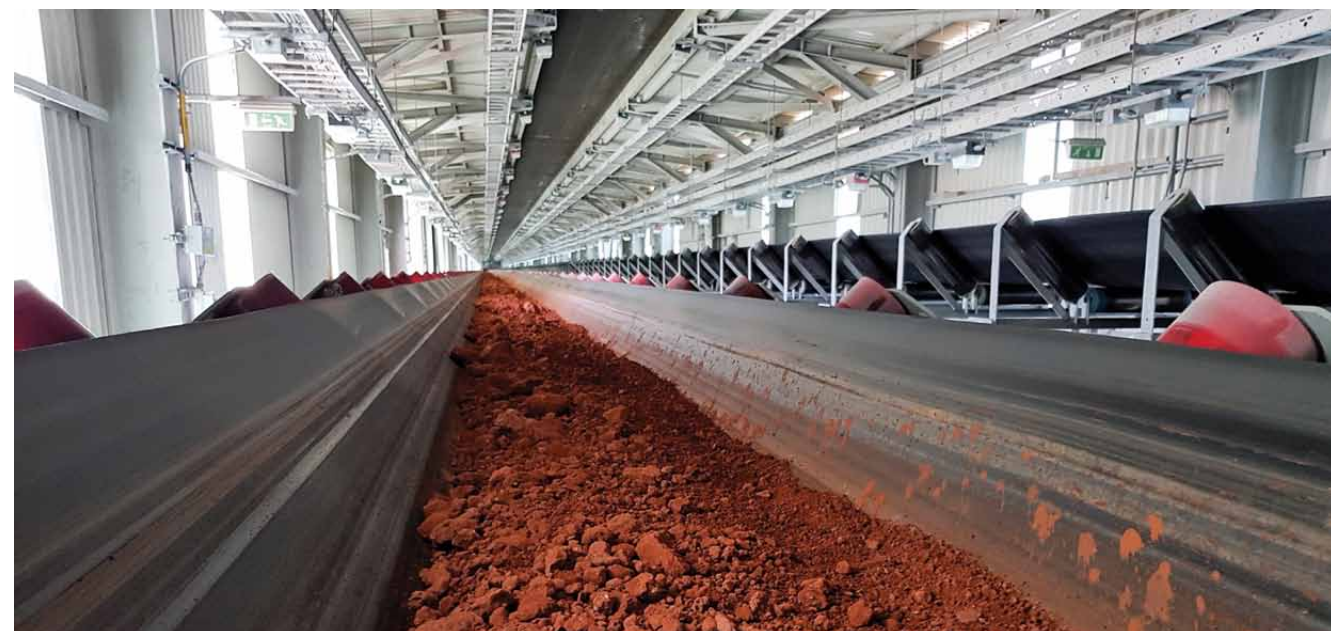
and eliminating the need for storage. A major objective is to convert the refinery's residue into an environmentally benign form that the group has termed "optimised bauxite residue". The production of optimised bauxite residue is a critical first step in the manufacture of almost all potential products that EGA plans to generate from the Al Taweelah residue and has required the development of new approaches to the formation and treatment of this by-product. Working in cooperation with several universities and consultants globally, the research and development group has made important strides towards this goal in 2018.



**EGA only recently completed construction of its first alumina refinery, but our efforts towards putting the refinery's by-product, bauxite residue, to practical use began years ago. EGA's strategy is unique in the alumina industry, identifying how this new raw material could be used to meet national objectives and regional needs.**



**MARKUS GRAEFE**  
Manager Bauxite Residue  
Technology Development and Transfer



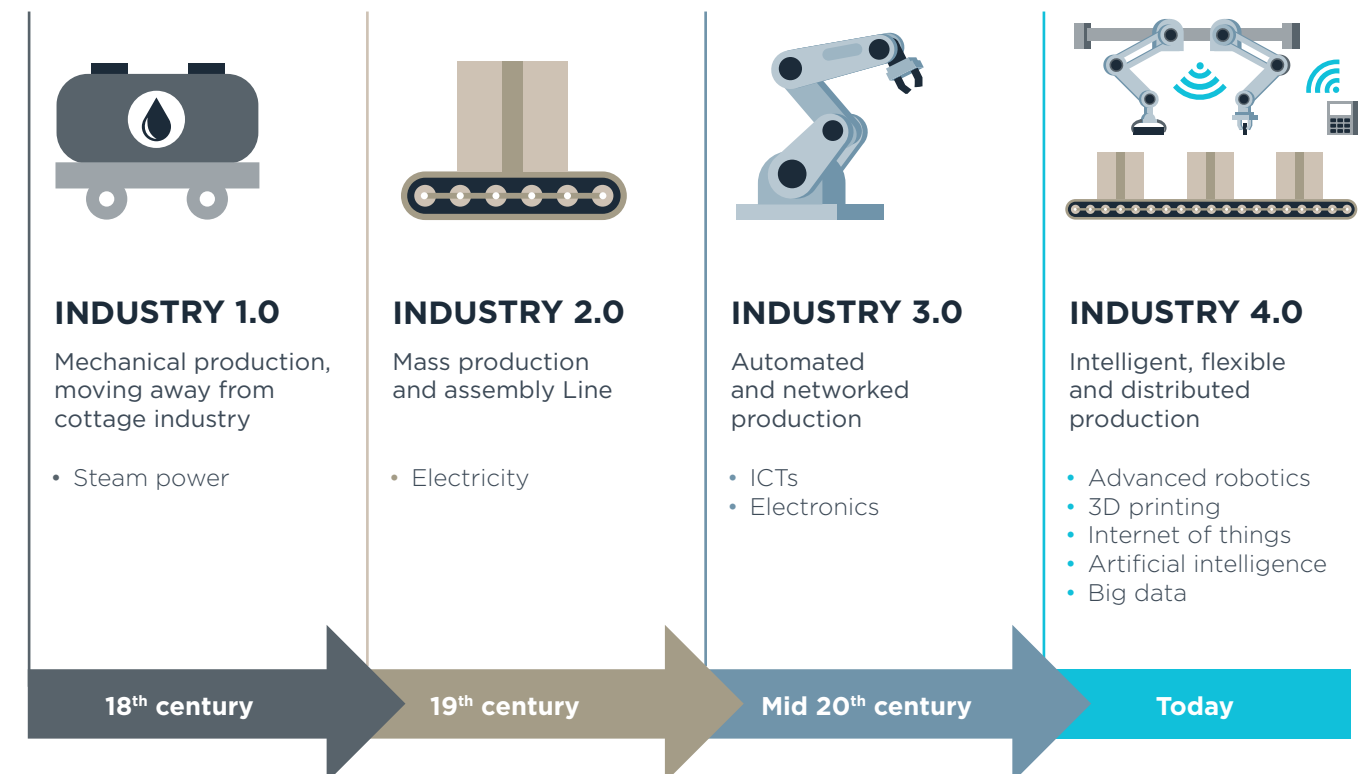
## Industry 4.0

The industrial sector is facing significant change over the coming years as the transition to digitisation, automation and artificial intelligence offer opportunities for significantly improved efficiencies. This transition is commonly referred to as the arrival of the fourth industrial revolution, the next evolutionary step after the computerisation of industrial processes (the third industrial revolution) during the second half of the 20<sup>th</sup> century.

In 2018 EGA set its road map for Industry 4.0 with plans for low cost, intelligent automation, the use of autonomous vehicles and robot technology plus data-driven live decision making. These innovations are expected to deliver reduced energy consumption, minimised safety risks, an upskilling of staff and significant cost savings.

Through a partnership with The University of Queensland's School of Agriculture and Food Science, proof of concept has been achieved on the conversion of optimised bauxite residue into a type of manufactured soil (turba) with potential applications here in the UAE. Building on the manufactured soil concept, a two year study was commissioned in 2018 with the American University of Sharjah to determine which organic wastes available in the UAE could be converted into biochar, a soil additive, with potential for improving the nutrient and moisture properties of turba (while also reducing waste to landfill).

In addition to the potential use of bauxite residue for the manufacture of soils, EGA is also exploring the technical and commercial viability of developing products for the construction industry. Working with Vlaamse Instelling voor Technologisch Onderzoek (VITO, a European research organisation), EGA has identified a range of potential large volume products and is consequently developing new focused research projects. This research will kick off in early 2019 and it is hoped will lead to a range of novel products that will ultimately reduce the UAE's reliance on the import of construction materials.



## Centre of Excellence

EGA's Centre of Excellence is a research centre and knowledge bank located at Al Taweelah. The Centre conducts research into practical challenges in EGA operations and proposes solutions that seek to optimise our internal processes, including finding opportunities for minimising environmental impacts and achieving cost savings. Our Centre of Excellence conducts research in collaboration with academic institutions in the UAE and internationally and has previously partnered with the Masdar Institute, The American University of Sharjah, Rochester Institute and the University of New South Wales.



EGA has conducted research in collaboration with Massachusetts Institute of Technology for the past four years. In 2018 EGA conducted the following research projects with MIT:

- Modelling of the environmental footprint of spent pot lining (SPL) used in cement production
- Options for improved optimal process control in our alumina refinery
- Options for reduced corrosion effects at cooling towers associated with salt deposition
- Assessment of seawater capacity for Jebel Ali Power Plant
- Optimisation modelling for coke blending with opportunities for reducing raw material input by 10 kg/t Al

Since 1985 EGA has prepared and submitted more than 150 research papers to international committees and conferences specific to the aluminium industry including:

- The Minerals, Metals & Materials Society
- The International Committee for Study of Bauxite, Alumina and Aluminium
- The Australasian Aluminium Smelting Technology Conference
- Alumina Quality Workshop

The Minerals, Metals & Materials Society (TMS) holds a conference every year which is an important platform for aluminium industry professionals to network and learn about advances in the industry. In 2018, we presented four papers to TMS covering the following:

- Improvement in smelter process analysis through lab modernisation
- EGA's new D20+ technology with reduced energy consumption
- Effect of changes in anode top cover composition on anode butt quality
- DX+ Ultra industrial version: preheat start-up and early operation

The 2018 Conference of the International Committee for Study of Bauxite, Alumina and Aluminium took place in Belem, Brazil from 29 October to 1 November 2018. Twelve papers from EGA were presented and published in the conference proceedings, covering subjects including energy management, environmental performance, operational efficiencies and safety.

### Environmental footprint of SPL use in cement production



Study findings from 0.6% SPL in raw meal for cement kiln at a UAE-based cement manufacturer:

FUEL REQUIREMENTS	30% ↓
NO <sub>x</sub> EMISSIONS	3.5% ↓
CO <sub>2</sub> EMISSIONS	0.72% ↓
SO <sub>x</sub> EMISSIONS	Unchanged

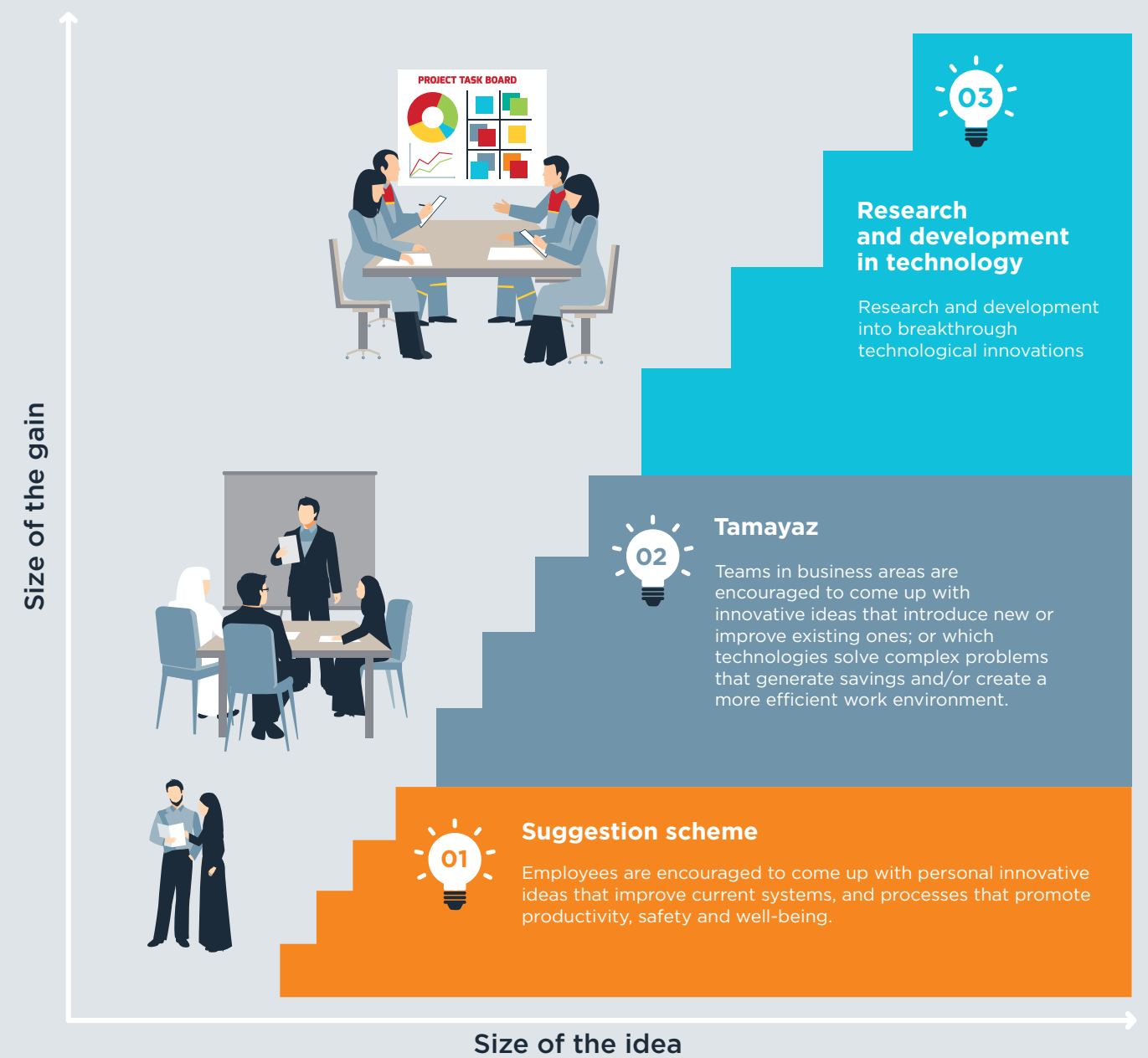
## Our innovation

EGA has focused on innovation and continuous improvement for decades as a foundation for developing and maintaining global competitiveness.

We believe that the people closest to a work process are often in an ideal position to identify what

improvements are required and to create the best solution. Therefore we have put in place a system to encourage and reward innovative thinking at all levels of our organisation. EGA operates two lean manufacturing initiatives, the EGA Suggestion Scheme and the Tamayaz programme.

### EGA Innovation Journey



## EGA's Suggestion Scheme

EGA's Suggestion Scheme is a reward and recognition programme designed to make continual incremental improvements to the company's performance by decentralising the process of continuous improvement and encouraging employee engagement, to help make our processes, systems and equipment better.

EGA's Suggestion Scheme was first launched in May 1981, making it one of the world's longest running structured suggestion schemes. In 2018 we received a record number of 38,037 suggestions of which 32,122 were implemented, saving the organisation more than AED 47 million (USD 13 million). Those EGA staff who are involved in a successfully implemented suggestion are financially rewarded and recognised throughout our organisation.

In 2018 improvements made by our employees as a result of the Scheme were awarded two gold awards by Ideas Arabia<sup>91</sup>.

EGA's first winning idea (in the Productivity Category) related to improvements made to steam turbine cycle efficiency at our power plant in Al Taweelah. The second winning idea (in the Innovation Individual Idea Category) related to the in-house development and fabrication of an automated maintenance machine, also at our Al Taweelah site.

### 2018 Suggestions

SUGGESTIONS SUBMITTED	38,037
IMPLEMENTED AND AWARDED EMPLOYEE SUGGESTIONS	32,122
AUDITED SAVINGS (USD million)	13



It was a great pleasure to be given the opportunity by EGA's management to participate in the 'Idea Arabia' event. Winning the 2018 idea of the year gold award was just the icing on the cake. It motivated me to work harder and to think about more innovative ideas.

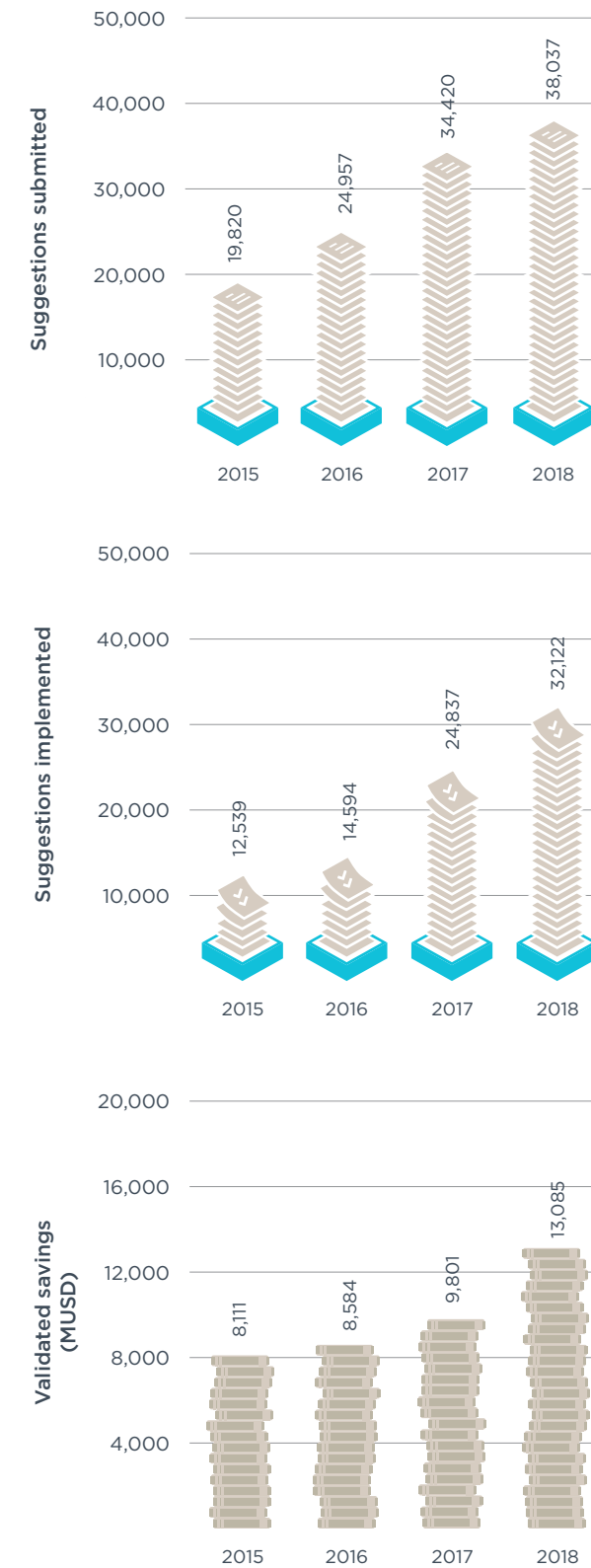


**ANURAG MOHANTY**  
Supervisor - Planning  
Maintenance



<sup>91</sup> Ideas Arabia is a competition organised by Dubai Quality Group (DQG) that emphasises the importance of innovation in fostering businesses and provides a forum for companies to share their best practice. For further information on DQG annual awards please visit <https://www.dqg.org>

Figure 33: Suggestion scheme achievements



## 2018 Suggestion Scheme success

### Improving steam turbine cycle efficiency

In 2018 our power team developed an idea to improve steam temperature controls, increasing the turbine efficiency of our power plants.

The idea improves fuel efficiency, reducing emissions by approximately 13 thousand tCO<sub>2</sub>e per year. Equivalent to removing 2,792 cars from the UAE's roads and saving some AED 625,000 per year (USD 170,146) in natural gas.



### In-house designed automated maintenance machine

Our maintenance team designed and built a remote-controlled robot to access confined spaces.

This machine significantly reduces the need for human access to these confined spaces, reducing safety risks. The suggestion also enabled savings of up to AED 800,000 (USD 217,788).





## Tamayaz programme

Tamayaz is EGA's reward and recognition programme to encourage continuous improvement by teams and is led by middle managers. The programme helps teams tackle complex problems and apply scientific tools for identifying root causes and solutions. Tamayaz is the Arabic word for "differentiate" or "distinguish oneself", a name intended to inspire those engaged in the programme.

### 2018 Tamayaz programme



SUBMITTED PROJECTS

201

IMPLEMENTED AND AWARDED

83

AUDITED SAVINGS  
(USD million)

5.6

In 2018 the Tamayaz programme recorded a total of 201 submitted projects from which 83 were implemented, saving the organisation more than AED 20 million (USD 5.6 million). All EGA staff involved in a successful Tamayaz project are financially rewarded and recognised throughout the organisation.

Through the Tamayaz programme, EGA received several gold, silver and bronze awards from the Dubai Quality Group for Continual Improvement<sup>92</sup>.



As a pioneer in implementing employee suggestion and reward schemes in the country, EGA has been a trailblazer in inspiring others to follow in its footsteps. EGA is also actively involved in the Global Continual Improvement and Innovation Symposium - and other signature DQG events, through the submission of case studies.



**SALMAN VIRALIPURATH**  
Deputy Managing Director  
Dubai Quality Group



## 2018 Tamayaz - Generating cost savings through team building

Case study

During the manufacture of anodes, accurate temperature control is essential to ensure the quality of the end product. To help monitor temperatures we use a series of sensors which are consumed over time by the intense heat of the anode manufacturing process. In 2018 it was noted that the replacement of these temperature sensors accounted for up to 25 per cent of the entire instrumental maintenance department's annual budget. This triggered an improvement initiative organised through our Tamayaz programme with the intention of reducing the use of materials and associated cost. A cross-functional team worked for three consecutive days resulting in the implementation of 69 individual improvements. These included in-house modification of cabling to better suit our needs, optimising the types of sensors used, enhancing repair mechanisms at the workshop and standardisation of the handling processes between operations and maintenance teams. The end result was a 50 per cent reduction in material consumption and cost.



<sup>92</sup> A competition where organisations can submit their best practice case studies in the following categories: Kaizen, Lean Six Sigma, Innovation and Best Practice Management. Awards are for the quality and creativity of innovation.



# 07



## Appendices

## External assurance



### Independent Limited Assurance Report to Emirates Global Aluminium

#### Conclusion

Based on the evidence we obtained from the procedures performed, we are not aware of any material misstatements in the Selected Performance Areas as described below, which is prepared in accordance with Global Reporting Initiative (GRI) Standards Principles for Defining Content and Quality for the period ended 31 December 2018.

#### Information Subject to Assurance

The Selected Performance Areas as presented in the Emirates Global Aluminium (EGA) Sustainability Report 2018, subject to assurance, comprise the following:

Selected Performance Areas	Page no.
2018 Safety Performance Data (Injury Rate, Fatalities, and Occupational Disease Rate)	64, 67, 68, 69, 70, 72
Environmental incidents and spills	57, 58
2018 NOx, SOx, and Fluoride Emissions and Particulate Matter	46, 47, 48, 49
2018 GHG Emissions (Total Scope 1 and 2)	51, 52
Employee and community engagement	74, 75, 99
2018 Training data	97
Anti-bribery and corruption procedures, policies and associated disclosures	83, 84
Ensuring against any forced or child labour, equal opportunity, non-discrimination and a fair and supportive workplace disclosures	39, 83, 84, 85

#### Criteria Used as the Basis of Reporting

The GRI Standards Principles for Defining Content and Quality ("the criteria"), as published by the Global Reporting Initiative is the criteria used as the basis of reporting and our audit work.

#### Basis for Conclusion

We conducted our work in accordance with International Standard on Assurance Engagements ISAE 3000 (Standard). In accordance with the Standard we have:

- used our professional judgement to plan and perform the engagement to obtain limited assurance, where, we are not aware of any material misstatements in the Selected Performance Areas, whether due to fraud or error;
- considered relevant internal controls when designing our assurance procedures, however we do not express a conclusion on their effectiveness; and
- ensured that the engagement team possess the appropriate knowledge, skills and professional competencies.

#### Summary of Procedures Performed

Our limited assurance conclusion is based on the evidence obtained from performing the following:

- enquiries with relevant EGA management and staff to understand EGA's process for determining material issues;
- the process for developing the Selected Performance Areas within the EGA Sustainability Report 2018;
- enquiries with relevant EGA management and staff to understand the internal controls, governance structures and reporting processes for the Selected Performance Areas;
- analytical procedures over the Selected Performance Areas;
- site visits to Jebel Ali and Al Taweelah;
- walkthroughs of the Selected Performance Areas to source documentation;
- evaluating the appropriateness of the criteria with respect to the Selected Performance Areas; and
- considering that the appropriate indicators have been reported in accordance with the GRI Sustainability Reporting Standards Core level of disclosures; and
- reviewed the EGA Sustainability Report 2018 in its entirety to ensure it is consistent with our overall knowledge of EGA's sustainability approach.

#### How the Standard Defines Limited Assurance and Material Misstatements

The procedures performed in a limited assurance engagement vary in nature and timing, and are less extensive than those procedures performed for reasonable assurance. Consequently the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had reasonable assurance procedures been performed.

Misstatements, including omissions, are considered material if, individually or in the aggregate, they could reasonably be expected to influence relevant decisions of the Management of EGA.

#### Use of this Assurance Report

This report has been prepared for the Management of EGA for the purpose of providing an assurance conclusion on the Selected Performance Areas, and may not be suitable for another purpose. We disclaim any assumption of responsibility for any reliance on this report, to any person other than the Management of EGA, or for any other purpose than that for which it has been prepared.

#### Management's Responsibility

Management are responsible for:

- determining that the criteria are appropriate to meet their needs;
- preparing and presenting the Selected Performance Areas in accordance with the criteria; and
- establishing internal controls that enable the preparation and presentation of the Selected Performance Areas that is free from material misstatement, whether due to fraud or error.

#### Our Responsibility

Our responsibility is to perform a limited assurance engagement in relation to the Selected Performance Areas for the period end 31 December 2018, and to issue an assurance report that includes our conclusion.

#### Our Independence and Quality Control

Our work was performed in compliance with the requirements of the International Federation of Accountants (IFAC) Code of Ethics for Professional Accountants, which requires, among other requirements, that the members of the assurance team (practitioners) as well as the assurance firm (assurance provider) be independent of the assurance client, in relation to the scope of this assurance engagement, including not being involved in writing the Report. We comply with the applicable independence and other ethical requirements of the IESBA code.

**KPMG**

10 September 2019

## GRI content index

The GRI content index is a navigation tool that specifies which GRI standards are used, which disclosures have been made and where these disclosures can be found in the report.

GRI standard #	Disclosure	Page number	Notes for omission	
<b>General disclosures</b>				
GRI 102 General disclosures 2016	<b>Organisation profile</b>			
	102-1	Name of the organisation	12	
	102-2	Activities, brands, products and services	13, 31	
	102-3	Location of headquarters	13	
	102-4	Location of operations	13	
	102-5	Ownership and legal form	12	
	102-6	Markets served	30-31	
	102-7	Scale of the organisation	12-13, 30, 36	
	102-8	Information on employees and other workers	38, 90, 92	
	102-9	Supply chain	39-40	
	102-10	Significant changes to the organisation and its supply chain	13	
	102-11	Precautionary principle or approach	44, 60-61	
	102-12	External initiatives	14	
	102-13	Membership of associations	14	
		<b>Strategy</b>		
	102-14	Statement from senior decision-maker	9	
		<b>Ethics and integrity</b>		
	102-16	Values, principles, standards and norms of behaviour	14	
		<b>Governance</b>		
	102-18	Governance structure	23	
		<b>Stakeholder engagement</b>		
	102-40	List of stakeholder groups	24	
	102-41	Collective bargaining agreements	95	
	102-42	Identifying and selecting stakeholders	24	
	102-43	Approach to stakeholder engagement	24, 32, 74, 95, 99	
	102-44	Key topics and concerns raised	25, 99	
		<b>Reporting practice</b>		
	102-45	Entities included in the consolidated financial statements	13	
	102-46	Defining report content and topic boundaries	24-27	
	102-47	List of material topics	25-27	
	102-48	Restatements of information	36, 46	
102-49	Changes in reporting	26		
102-50	Reporting period	6		
102-51	Date of most recent report	6		
102-52	Reporting cycle	6		
102-53	Contact point for questions regarding the report	6		

GRI standard #	Disclosure	Page number	Notes for omission
	102-54	Claims of reporting in accordance with the GRI standards	6
	102-55	GRI content index	118-120
	102-56	External assurance	116-117

<b>Critical topics</b>				
<b>A safe and healthy workplace at EGA</b>				
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	26, 60-62	
	103-2	The management approach and its components	60-62	
	103-3	Evaluation of the management approach	60-62	
GRI 403: Occupational Health and Safety 2018	403-1	Occupational health and safety management system	60-62	
	403-2	Hazard identification, risk assessment and incident investigation	60-62	
	403-3	Occupational health services	70-73	
	403-4	Worker participation, consultation and communication on occupational health and safety	61, 95, 99, 109	
	403-5	Worker training on occupational health and safety	61-62	
	403-6	Promotion of worker health	70-73	
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	39, 61	
	403-8	Workers covered by an occupational health and safety management system	61	
	403-9	Work-related injuries	9, 64-69	
	403-10	Work-related ill health	66-73	
<b>Business integrity and ethics</b>				
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its boundary	26, 83	
	103-2	The management approach and its components	83-85	
	103-3	Evaluation of the management approach	83-85	
GRI 205: Anti-corruption 2016	205-1	Operations assessed for risks related to corruption	83	
	205-2	Communication and training about anti-corruption policies and procedures	84	
	205-3	Confirmed incidents of corruption and actions taken	84	
GRI 206: Anti-competitive behaviour 2016	206-1	Legal actions for anti-competitive behaviour, anti-trust and monopoly practices	85	
GRI 419: Socioeconomic compliance 2016	419-1	Non-compliance with laws and regulations in the social and economic area	85	
<b>Respecting human rights</b>				
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its boundary	26, 74-77, 83, 95	
	103-2	The management approach and its components	39, 74-77, 83-84, 95	
	103-3	Evaluation of the management approach	39, 74-77, 82-85	

GRI standard #		Disclosure	Page number	Notes for omission
GRI 406: Non-discrimination 2016	406-1	Incidents of discrimination and corrective actions taken	84	
GRI 408: Child labour 2016	408-1	Operations and suppliers at significant risk for incidents of child labour	39, 83	
GRI 409: Forced or compulsory labour 2016	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labour	39, 83	
GRI 410: Security practices 2016	410-1	Security personnel trained in human rights policies or procedures	77	Reported only where risk is considered material
<b>Environmental controls and management systems</b>				
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its boundary	27, 44	
	103-2	The management approach and its components	44-59	
	103-3	Evaluation of the management approach	44-59	
GRI 307: Environmental compliance 2016	307-1	Non-compliance with environmental laws and regulations	57	
<b>Our employees</b>				
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its boundary	26, 88	
	103-2	The management approach and its components	88, 95, 96, 99, 100-101	
	103-3	Evaluation of the management approach	85, 96, 99	
GRI 401: Employment 2016	401-1	New employee hires and employee turnover	94-95	
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	96	
GRI 404: Training and education 2016	404-1	Average hours of training per year per employee	97	
	404-3	The % of employees receiving regular performance and career development reviews	96	
GRI 405: Diversity and equal opportunity 2016	405-1	Diversity of governance bodies and employees	91, 93	
<b>Air quality and emissions</b>				
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its boundary	27, 44	
	103-2	The management approach and its components	44-52	
	103-3	Evaluation of the management approach	44-52	
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	51	Reported only for operational activities.
	305-2	Energy indirect (Scope 2) GHG emissions	52	
	305-4	GHG emissions intensity	52	
	305-5	Reduction of GHG emissions	53	
	305-7	Nitrogen oxides (NO <sub>x</sub> ), sulfur oxides (SO <sub>x</sub> ), and other significant air emissions	46-49	

## ASI content index

The ASI content index is a navigation tool that specifies which Aluminium Stewardship Initiative Performance standards' disclosure requirements have been made and where these disclosures can be found in the report.

ASI standard	ASI ref #	Disclosure requirement	Page number
Sustainability reporting	3.1	Governance approach and material, environmental, social and economic impacts	1-120
Non-compliance and liabilities	3.2	Information on significant fines, judgements, penalties and non-monetary sanctions for failure to comply with applicable law	85
Payments to governments	3.3 b	Payments to governments, building on existing audit and assurance systems	36
Disclosure of GHG emissions and energy use	5.1	Material GHG emissions and energy use by source	50-52
GHG emissions reductions	5.2	Time-bound GHG emissions reduction targets	53
Emissions to air	6.1	Emissions to air	46-49
Discharges to water	6.2	Discharges to water	54
Reporting of spills	6.4 b	Impact assessments of any significant spills and remediation actions taken	57-58
Waste management and reporting	6.5 b	Quantity of hazardous and non-hazardous waste generated and associated waste disposal methods	56-57
Disclosure of water usage and risks	7.3	Water withdrawal and use. Material water related risks.	53-54
Biodiversity management	8.2 c	Biodiversity action plan outcomes	58-59



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