Decarbonization strategy and Carbon Border Adjustment Mechanism ("CBAM")
SEPTEMBER 2023
Together, innovating aluminium to make modern life possible
The largest ‘premium aluminium’ producer in the world

#1 'premium aluminium' producer worldwide in 2021
2.54 million tonnes of metal sold in 2021
4% of world aluminium production
50+ countries supplied

$2.6 billion net income in last five years
1st Middle East headquartered company to join Aluminium Stewardship Initiative
1st in UAE to sell our own industrial technology internationally
7,000+ people employed worldwide
EGA’s activities cover mining to primary products
EGA’s products are in four categories, and enable modern life

**EGA Products**

- **Billets**
- **Sheet Ingots**
- **High Purity**
- **Foundry Alloys**

**End-use examples**

1. **Billets**
2. **Sheet Ingots**
3. **High Purity**
4. **Foundry Alloys**
EGA supplies globally-important industries
Aluminium is expected to play a key role in energy transition creating an opportunity for EGA and UAE

Increasing demand for new products / applications driven by the energy transition

Electric Vehicle production
Million vehicles

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<tr>
<th>Year</th>
<th>2020</th>
<th>2030</th>
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<tbody>
<tr>
<td>x20</td>
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Solar PV Capacity additions, GW

<table>
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<th>Year</th>
<th>2020</th>
<th>2030</th>
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<td>x4</td>
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Offshore wind Capacity additions, GW

<table>
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<th>Year</th>
<th>2020</th>
<th>2030</th>
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<tr>
<td>x2</td>
<td>12</td>
<td>24</td>
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Customer needs

Request for low-carbon offerings with high share of recycled content
Steer towards full supply chain traceability

1. Total aluminium demand of ~120 Mt in 2030 - Electric Vehicles account for ~16 Mt, solar PVs for ~3 Mt and wind turbines for ~0.5 Mt
EGA’s strategy is centered around a diversified global sales footprint

2021 Sales volume, 000 mt, (Total: 2.54m mt)
EGA’s global sales operations is facing multiple challenges

**Globally**
Global shipping challenges from operator behavior and port congestions leading to cost hike and delivery issues.

**USA**
Section 232 is imposing high import tariffs on EGA’s metals.

**Europe**
CBAM carbon taxation system will potentially place high taxes on EGA’s metal.

**Russia-Ukraine**
Ongoing conflict is disrupting markets and increasing global energy prices – both for EGA and EGA’s customers.

**China-Taiwan**
Increasing tension in Taiwan could threaten EGA’s 100+kt sales in the country.

**UAE**
A country MRV and a National Carbon Registry have been set up, 2030/40/50 net emission targets are currently with Cabinet and a UAE-ETS is being presented to the public on Sept. 27th 2023.
EGA is well-positioned on the global aluminium industry carbon curve, and aims to strengthen its position significantly.
The carbon abatement challenge

- Energy (Electricity generation)
- Raw materials
  - Refinery (Thermal)
  - Smelter (Thermal & direct)
- Other scope 3
  - 0.1% Mining (Electricity & traction)
EGA has mapped a decarbonisation trajectory

- **1 Decarbonisation of electricity**
  - Project Square enables climate aligned 2030 target

- **2 Refinery & associated process**
  - MPP, RMI, SMI CCUS

- **3 Smelting casting & associated process**
  - ITMOs Portfolio and CDR
EGA Power and Steam Assets

EGA’s generation assets consist of 2 fleets of gas-fired power generators which are currently used to meet EGA’s electricity requirement for aluminium smelting and supply to aluminium refining/industrial activities.

**Al Taweelah (EMAL)**
- **Nameplate Generation Capacity:** 3,457 MW
- **Number of gas turbines:** 10
- **Number of steam turbines:** 4
- **Gas Consumption, [TBtu/year (LHV)]**
  - **150-175**
- **Electricity Demand, [MW baseload]**
  - **2,600**
- **Steam Demand, [GJ/hr]**
  - **800-1,200**
- **Security of Supply**
  - **N-2**
  - **or 32% reserve margin**

**Jebel Ali (DUBAL)**
- **Nameplate Generation Capacity:** 2,350 MW
- **Number of gas turbines:** 23
- **Number of steam turbines:** 7
- **Gas Consumption, [TBtu/year (LHV)]**
  - **125-135**
- **Electricity Demand, [MW baseload]**
  - **2,000**
- **Steam Demand, [GJ/hr]**
  - **N-2**
  - **or 20% reserve margin**

11 if accounting for H-Block & plant retirement
6 if accounting for H-Block & plant retirement
CelestiAL solar aluminium

- World’s first metal produced with solar power, a UAE global milestone
- 560,000 MWHs of solar power yearly from DEWA
- >40,000 tonnes of aluminium
- Sales to BMW Group, tier 1 suppliers of Mercedes-Benz and Nissan
Growing a business in recycling

- Planned 150,000 tpa recycling facility in UAE, producing billets from post-consumer and pre-consumer scrap
  - Feasibility study underway, tenders for main work packages issued. Could begin production as soon as 2024
  - EGA is also exploring a re-melt facility of around 30kmt per year to sweeten primary Foundry products up to 30 per cent for individual customers
  - Plus interested in pursuing recycling projects with customers around the world
SECTORS AFFECTED

- **Transition Phase from 2023**: Report ‘embedded emissions’ of imported Products

  - CEMENT
  - IRON & STEEL
  - ALUMINIUM
  - FERTILIZER
  - ELECTRICITY

  Commodities selected for maximum impact, these contribute up to 45% of total EU emissions. Limited to products that are easily identifiable, hence only certain CN codes (Combined Nomenclature).

- **Regulation is Fully Implemented from 2026***: Buy sufficient CBAM Certificates to cover Product footprint

  More products, commodities and sectors such as chemicals will be impacted by CBAM, aligned with EU ETS.

  The scope of emissions will also expand to cover the product lifecycle, including upstream, transportation & recycling.
TIMELINES AND MILESTONES

- **CBAM Proposal**
  Initial proposal was published in July 2021

- **Today**
  - Welcome to this session!
  - EU council approved the CBAM proposal in May
  - EU Parliament voted for CBAM in June as part of Green Deal
  - Member states are also in favour
  - Trialogue taking place now

- **CBAM is Effective in Transition Phase**
  - Regulatory impact, but no financial impact
  - EU Importers register as CBAM Declarants
  - EU Importers report embedded emissions in imported products

2021

2022

2023

- **Evolution - Implementing Acts**
  - Further refinements are expected
  - Commodities & list of products to expand
  - Scope to expand to cover indirect emissions

- **CBAM Regulation is Fully Implemented**
  - Financial impact – Importer need to buy CBAM certificates
  - Beneficial to declare actual embedded emissions

Up to 2025*

2026* Onwards
Practical guide for CBAM reporting – what our declarants need to know

Laying down the rules for the application of Regulation (EU) 2023/956 of the European Parliament and of the Council as regards reporting obligations for the purposes of the carbon border adjustment mechanism during the transitional period.

1. Reporting Declarant for CBAM purpose

- **reporting declarant** means any of the following persons:
  - (a) the importer who lodges a customs declaration for release for free circulation of goods in its own name and on its own behalf;
  - (b) the person, holding an authorization to lodge a customs declaration referred to in Article 182(1) of Regulation (EU) No 952/2013, who declares the importation of goods;
  - (c) the indirect customs representative, where the customs declaration is lodged by the indirect customs representative appointed in accordance with Article 18 of Regulation (EU) No 952/2013,

2. EGA Export Documents

- EGA has updated its suite of export documentation to include an ESG Certificate showing the Co2 emissions for the products being imported.

3. EGA Freight Forwarder Portal

- With effect from 1 October 2023, EGA has enhanced their Freight forwarder portal to include two additional mandatory fields in order to comply with CBAM.

4. Reporting for CBAM

- For each quarter from 1 October 2023 until 31 December 2025 the reporting declarant shall submit the CBAM reports to the CBAM Transitional Registry no later than one month after the end of that quarter. The first filing for all declarants will fall due by no later than 31 January 2024.

**KEY POINTS**

All declarants must register with the CBAM Transitional Registry once the portal has been made available by the EU Commission

If EGA the declarant for CBAM purposes, then both will complete their own reporting. However, where the Freight Forwarder is a declarant for CBAM purpose then the reporting obligation will fall under their scope.

EGA will endeavor to provide each declarant with a report with the details contained in Annex III of the regulations to each declarant for reporting prior to the filing date of 31 January 2024.
An ESG certificate will be included in EGA suite of export documentation. Scope 1 and 2 emissions will be reported during the transitional period. An example ESG certificate is shown below.
Introduction – What is the MRV?

• EGA reports its CO2 emissions to different entities across the world, in different formats and approaches

• Currently, the process is managed using excel worksheets, as does the rest of the world

• The use of excel has been widespread as Verifiers (auditors) review such worksheets and need to see how numbers are computed

• The Carbon Border Adjustment Mechanism (CBAM) has been a turning point globally and imports now have to submit CO2 data for shipment clearances

• EGA’s exposure to CBAM is several 1000s of orders every year and as such needs to implement a robust and verifiable CO2 data management system
Currently EGA has a semi automated process whereas on monthly bases data, verified by the respective units, is aggregated and processed into a GHG dashboard and viewed in Power BI. Data is annually verified by 3rd party to meet CBAM timelines (31MAY) as of: June-2023

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<th>Unit (scope 1&amp;2)</th>
<th>YTD</th>
<th>Target</th>
<th>Forecast</th>
<th>YTD</th>
<th>Target</th>
<th>Forecast</th>
<th>YTD</th>
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<tr>
<td>Total</td>
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<td>7.53</td>
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Notes:
1. Figures for ATA reported in t/t alumina and for GAC in t/t bauxite. Both are converted to t/t Al to calculate EGA figures
2. Scope 3 figures are estimated based on 2019 LCA report (mining to casting, excl. downstream emissions), and intensities are assumed to remain constant. In 2023, scope 3 will be calculated using the new IAI tool
3. Targets for Q1 and Q2 is 8.15 t/t Al (excluding celestials), and for Q3 and Q4 is 7.80 t/t Al (including celestials)
The MRV will automate the process of data aggregation and process it in many different outputs and reports

Once implemented, the MRV will have real-time data and be capable of issuing CO₂-related reports, LCAs, EPDs, and certificates with proper disclosures and auditability.
What is a data Lake

A data lake is a centralized repository designed to store, process, and secure large amounts of structured, semistructured, and unstructured data. It can store data in its native format and process any variety of it, ignoring size limits.