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Dear Readers,

The world has long been captivated by the Gulf Cooperation Council (GCC) countries, which have used their strategic geographic location, abundance of oil and gas resources, and self-reliant financial strength to become major industrial players over the last few decades. Aluminium has undoubtedly been a key component of this transformation.

The aluminium industry began in this region only four decades ago in Bahrain with the Alba smelter, yet now, with the addition of new smelters in the UAE, Qatar, Oman, and Saudi Arabia, the region accounts for nearly 20% of global aluminium production, excluding China. This substantial growth is partly a testament to global trends of supply and demand, but also to the steadfast focus and determination of the industry to make aluminium production in the Gulf truly great.

Today, the aluminium industry is a vibrant sector in the Gulf and a major contributor to the economies of the region. It is an important source of direct employment and a key contributor to a number of small- and medium-sized support industries. And even as the world has turned its attention to the aluminium sector in the GCC, it is not merely a story of success, but also a story of healthy competition, synergy, and collaboration between the various participants and countries for the greater good of the sector, and region as a whole.

Given aluminium's spirited pace of development in the GCC and its elevated place in the sector's world order, Global Business Reports (GBR) has come to the Gulf to evaluate the opportunities and also the challenges that the sector faces as it pushes ever forward. This pre-release edition of GBR's research explores the dynamics taking place in the UAE, Bahrain, Qatar and Oman by looking at not only the primary smelters, but also the increasingly important downstream sector. GBR therefore spends significant time understanding the support industries, including engineering, equipment and service providers, legal, logistics and finance. Taken together, all of these parties tell the story of aluminium in the Gulf.

We want to thank all of those who have generously donated their time and insights to GBR's research. As 2015 comes to a close, GBR will look toward Saudi Arabia and Kuwait to conclude their research and release its final report in the January/February edition of Aluminium International Today, as well as its own Industry Explorations investment guide: GCC Aluminium 2016.

Kind regards,

Abdulla Kalban
Chairman, Gulf Aluminium Council (GAC),
Managing Director and CEO, Emirates Global Aluminium (EGA)



All Roads Lead to Here

The GCC region has the winning formula to attract future investment in aluminium primary and secondary production.

Within the aluminium community the world over, the hot topic is the current low price of the commodity. From aluminium's LME peak price of US\$2,678.11 per tonne in April 2011, it has plunged to US\$1,589.60 as of September 2015, a 40% drop in less than five years. Though its decline has neither been as sharp, nor as drastic as that of oil, aluminium producers worldwide have felt the tangible effects of the LME price reduction, not necessarily in sales, but in marginal profit.

Separate from this short-term trend, within the last few decades, primary aluminium production has seen tectonic shifts. As the metal has gained popularity as an alternative to steel and iron in many applications, new production is taking place outside traditional markets. Describing some of the global trends, Pete Forakis, regional director of STAS Middle East, of the Quebec-based high tech equipment specialist company, stated: "The aluminium sector in North America is in decline, in Western Europe it is virtually decimated due to energy prices, China is a challenge as they have their own domestic supply, there is no expansion in Australia and while India has potential, it is not without its own challenges." Considering the short- and long-term dynamics taking place, the GCC region has the perfect formula to attract future investment in aluminium.

Recognizing the energy-intensive nature of the industry, the leadership of the Gulf Cooperation Council (GCC) countries saw an opportunity: "The region has taken wise steps to benefit from their resources and diversify

their economies. The aluminium sector represented a logical path for such countries to industrialize their economies," explained Joseph Kirikian, head of industrials & services at Bahrain Mumtalakat Holding Company (Mumtalakat), the investment arm of the Kingdom of Bahrain.

There are three main elements needed to build aluminium smelters according to Mahmood Daylami, secretary general of the Gulf Aluminium Council (GAC). The first is energy, and the Gulf is rich in this regard. The availability of energy translates into lower costs. The chairman of the GAC and managing director and CEO of Emirates Global Aluminium (EGA), Abdulla Kalban noted: "According to an October 2013 report produced by the Centre for European Policy Studies on behalf of the European Commission, the Middle East smelters boasted the lowest in terms of conversion cost, business cost and economic cost per mt of aluminium in 2012. The region ranked among the lowest in terms of power costs per tonne of aluminium at the same point in time."

The second factor is financial strength, which in the GCC region was built on energy resources, as it is home to 56% of the proven world reserves of oil and 40% of the proven world reserves of gas, and also the capital made available through local and international banks. Furthermore, according to Kalban: "At the industry level, the primary aluminium producers in the GCC enjoy financial backing from their respective national governments, who are, without exception, major shareholders if

not outright owners. Substantial investments of finance and industry know-how by major global players, notably Rio Tinto Alcan, Alcoa and Hydro, have been made in several of the newer players in the region. What's more, the GCC region is inherently stable from a political perspective, and the financial risk to investors is minimal."

The third component is markets. "The local industry for aluminium in the Gulf is increasing, and world demand for the metal enjoys an annual increase of 5%," stated Daylami. Demand for aluminium in the GCC has increased drastically in the last few decades. "Twenty years ago, having a presence in the Middle East was simply a smart cost strategy: cheap metal and cheap energy," according to Jean-Baptiste Lucas, CEO of the Gulf Aluminium Rolling Mill Co, (GARMCO), the oldest aluminium rolling mill in the Middle East. Lucas continued; "Nowadays, the Middle East has become a major and interesting player in terms of demand; the GCC population including Saudi Arabia is 50 million. Demand for aluminium is driven by the highly aluminium-dependent construction in Dubai, Doha and Riyadh, a growing middle class that consumes many products that require aluminium packaging, and downstream demand in automotive or transportation applications to produce ever-lighter vehicles, achieved through the increased substitution of steel parts for aluminium ones."

In 2008, there were only two smelters in the region, Alba and DUBAL, with a total hot metal production capacity of 1.92 million t/y, of which DUBAL accounted for the lion's share. "The excellent prospects for the Middle East aluminium industry," said Kalban, "were identified by the global industry some eight years ago, as confirmed by the announcement (and subsequent construction) of EMAL, Sohar Aluminium, Qatalum and Ma'aden."

Today, there are six smelters in the region, Alba, DUBAL, EMAL, Sohar, Qatalum and Ma'aden whose combined production capacity is approaching 5 million t/y. The world has turned its eyes to the GCC region for upstream production and the growing downstream. Each country is uniquely poised to respond to the local, regional and global demand and in turn the GCC will become an even more significant player on the aluminium sector's world stage as all roads lead to GCC aluminium.



Joseph Kirikian, Head, Industrials & Services,
Bahrain Mumtalakat Holding Company
(Mumtalakat)



Mahmood Daylami, Secretary General,
Gulf Aluminium Council (GAC)

Tim Murray

CEO, Aluminium Bahrain (Alba)



"In terms of cost-per-ton to build, Line 6 will probably be the best project in the world."

Alba, as the first smelter in the Gulf, essentially gave birth to the aluminium industry in this part of the world. What are Alba's main products and their final use?

Alba sells five core products with 40% of its production being billets, typically used for all types of construction and some automotive. Foundry alloys make-up 14% of production used mainly for automotive including wheels or die-casting. In addition, Alba produces rolling slabs, which makes up 13% of its production and are then sold to the downstream, offering a better value proposition.

The remaining 31% is liquid metal, also fed downstream, taken directly right out of the crucible and poured into the clients' furnaces. Midal Cables, Alba's largest customer, uses its aluminium primarily for cables and wiring. Smaller companies, like Bahrain Atomisers International, make paints, powders, and specialty chemicals with our primary materials. Commodity ingots make-up the remaining 2% of production, though these are not being sold at present, as the market is not favourable. Alba's strategy is two-fold: maximize value-added products, which provide leniency for price fluctuations and market buffers, and keep our base load downstream liquid.

In June 2015, Alba approved its Line 6 Expansion. Since then, the price of aluminium has fallen further. What impact has the lowered aluminium LME price had on the economics of the Line 6 expansion?

Alba's expansion is a brownfield expansion, which means capitalizing on existing infrastructure and systems already in place for cost efficiency. The aluminium LME price had already come down a bit when the project was approved in June, so the economics still work—the lower aluminium LME price has affected the project, but, nevertheless, Line 6 is still viable.

One factor that has offset the lower aluminium LME price relates to the construction costs; Alba has actually benefitted from commodities and supplier backlogs being very low. The advantage of Line 6 being a three-and-a-half year project is that it is not coming onto the market tomorrow; the aluminium forecasts are still fairly positive in the long run, in line with our 2019 target for completion. In terms of cost-per-ton to build, Line 6 will probably be the best project in the world.

Today, we are seeing a shakeup in commodity prices across the board. But unlike oil, for example, where there is a true oversupply in the market, aluminium is growing at a healthy 5 to 6% per year, aided by construction and packaging through increased basic consumption. Additionally, aluminium benefits from its substitutive properties in auto-

motive. Cabling is another area where aluminium's usage is growing. Midal Cables, for example, is replacing its copper with aluminium, which costs four to five times less. Fundamentally, the long-term outlook for aluminium is promising. When Line 6 is completed, it will bring Alba's production up to roughly 1.5 million t/y, making Alba the largest single-site smelter in the world. This expansion is not only strategic for the company, but also for Bahrain, as at least half of the metal from Line 6 will be designated to the downstream in order to further develop the sector to continue capturing value locally.

Can you tell us about Alba's recycling initiatives and how Alba serves as a model to the local and regional industry in this regard?

Alba certainly is a leader when it comes to Safety, Health and Environment (SHE), as it is paramount to the core of our operations. Unlike other global players that may prioritize cost first, Alba makes it a point to acquire the latest and greatest technology with environmental controls built-in, which usually comes at a higher price. Alba benchmarks very well not just in Bahrain, or the greater GCC, but internationally, specifically in fume treatment and recycling, where we recycle around 95% of our own generated waste. Aluminium recycling by-products can be used to further create value-added products in the steel or the cement industry and Alba has demonstrated locally and to the region how this is done by leading through example. For instance, Alba buys green petroleum coke, a by-product of refining in the cracking process in oil, to make anodes used by the cement industry.

What aspect of Alba's operations do you believe has been the key to the company's long-term success?

Alba's philosophy and my own has always been that developing and training people is the cornerstone of any success we may see. Five years ago, Alba's production was 850,000 t/y, and this year it will hit 950,000 t/y. This will be accomplished using the same equipment, same operations, and same number of workers. This is a testament that productivity comes through the people. Unlike regions where the mind-set is largely profit driven, the Middle East truly puts an emphasis on how a company can benefit its people and when this is your focus, you see how employees can really improve the company's existing operations. In the short-term, it is very easy as a business to cut training or maintenance in order to reduce costs, but down the line, when there is no succession plan and workers leave and equipment starts falling apart, the previous cost-cutting measures end up becoming grave concerns that could have been avoided.



Final inspection of the cut-to-length flat sheet before being dispatched to customer. Photo courtesy of GARMCO.

Bahrain

The Birth of Aluminium in the GCC

Though the smallest GCC country by population, landmass and GDP, Bahrain has played a leading role in the development of an aluminium industry in the Gulf. Today, 10% of the country's GDP is derived from the aluminium sector. So important is this industry to the country that it was a major focus of the United States-Bahrain Free Trade Agreement, which came into force in 2006. Steven Brown, managing attorney of ASAR Al-Ruwayeh & Partners' Bahrain office, explained: "The agreement allowed Alcoa to ship inputs, such as alumina, to Bahrain without duties and facilitates aluminium being exported back to the United States without excise taxes and duties."

With production first starting up in 1971, Aluminium Bahrain (Alba) essentially heralded the birth of the aluminium sector in the region and today, the company is considered a significant national asset; it is majority owned by Mumtalakat (69.38%), SABIC Investment Company (20.62%), and is partially listed on the Bahrain Bourse. "From a small start in an effort to make use of the trapped gas resources through smelting, and as an endeavour to diversify the economy away from oil and gas by exporting billets, Alba has now grown to

produce roughly 932,000 t/y, making Alba the fifth largest single-site smelter in the world," declared Tim Murray, Alba's CEO.

Alba has created an ecosystem around itself, feeding 50% of its total production, including billets, foundry alloys, rolling slabs and liquid metal to the local downstream, which offers a better value proposition. "Alba's strategy is two-fold," continued Murray: "Maximize value-added products, which provide leniency for price fluctuations and market buffers, and keep our base load downstream liquid."

ALBA'S LINE 6 EXPANSION

In June 2015, Alba's board of directors approved the brownfield expansion of Line 6, which according to Murray will mean "capitalizing on existing infrastructure and systems already in place for cost efficiency, that will bring Alba's production up to roughly 1.5 million t/y, making Alba the largest single-site smelter in the world."

Furthermore, according to a 2015 press release from Alba, "[The] Board of Directors looked at various options from the Line 6 Bankable Feasibility Study and ultimately finally opted for the largest expansion option of 514,000 t/y which will significantly improve

Alba's overall cost position. The Line 6 potline will utilize DUBAL's DX+ Technology which will bring state-of-the-art technology to optimise cost performance and reduce energy consumption."

However, this expansion is not only strategic for Alba, but also for Bahrain, as Jarmo Kotilaine, chief economist of the Bahrain Economic Development Board explained: "Part of the Line 6 expansion is reengineering Alba as a whole; but more importantly for Bahrain, however, is that the expansion is about utilizing human capital in downstream production."

Though the aluminium LME price is currently in a trough, Alba maintains confidence going forward with the expansion as the lower price had already been accounted for when the project was approved in June; in other words, the economics of the project still work. Moreover, as Julian Clark, the regional director for MENA of Hatch, a global project delivery company, explained that there are significant cost advantages to expanding now: "When prices are depressed, any major project needs to procure a significant amount of metals, parts and services, all of which at present can be procured cheaper than in a bull market,

meaning it is also the perfect time for investment in new facilities. The smelters are in a strategic position to expand; however, making the decision to do so right now is a difficult one, but those who do will likely reap the rewards in the medium term as the global supply and demand rebalances and prices rise again.”

BAHRAIN’S BUOYANT DOWNSTREAM

At present, Bahrain has the most developed downstream sector in the GCC, largely due to its longevity. Referring to the historical model in Bahrain, Garry Martin, plant executive manager at Bahrain Aluminium Extrusion Co, (Balexco), pointed out: “This basic model of having the smelter with the downstream industries directly adjacent or in close proximity started in Bahrain with Alba supplying liquid metal in crucibles to Midal Cables, BAMCO, and Bahrain Atomizers. GARMCO and Balexco do not take supply in liquid metal form but being in the close proximity to Alba allows the efficient supply of the required cast products from Alba for the production of semi-fabricated rolled and extruded products respectively.”

Though not all downstream endeavours have been successful, it is this integration and ecosystem that Bahrain has built around Alba that has allowed aluminium to contribute to 10% of the country’s GDP. A case in point is that of Midal Cables, a significant player in the aluminium and electrical transmission industry in Bahrain and abroad. “Midal Cables and Alba have grown as a daughter and as a mother,” said Hamid Rashid Al Zayani, managing director of Midal Cables. “When Alba started, it produced 120,000 t/y, while Midal Cables produced 12,000 t/y. Today, Alba stands at around 900,000 t/y while Midal Cables stands at 300,000 t/y. In other words, Midal Cables takes roughly 25-30% of Alba’s product.”

While Alba and the downstream have grown together in near proximity, service providers, have also taken advantage to be near their clients to ensure efficiency of service. One such company was Pyrotek, a recognized world-leader for equipment, consumables and consulting related to the refining, melting, processing and casting of molten aluminium. In 2012, Pyrotek built its brand new 5,000 m2 plant at the Askar industrial area near Alba. Faisal Majeed, managing director of the Arabic region for Pyrotek, explained: “This move is part of the company’s global strategy to purposefully situate operations very near to those of our clients so that the company is able to operate as a local supplier that offers immediate support. Pyrotek has the technology and resources and our own-developed materials, and so the main areas of service include after-sales and technical support to cast houses.”

The presence of such a warehouse facility relieves plants of considerations that are non-core to their business. Majeed added: “Pyrotek is able to encourage customers to reduce their inventory by offering the opportunity to stock all of their products in our compound under a consignment stock agreement. Smelters have tens-of-thousands of numbered parts and would need a smelter-sized facility in order to store them all. Smelters depend heavily on cast house suppliers, with quick, local and specialized distribution. This responsive service becomes key, since the lead-time for material can sometimes take between eight-to-ten weeks.”

With nearby service providers and a well-established downstream sector, aluminium in Bahrain is continuing to move forward as existing companies further develop their operations and also as the sector prepares for the entrance of new players. Balancing current trends and expectations for the long-term, in 2015 GARMCO announced its partnership with Fives Solios, the aluminium branch of the international industrial engineering group, to build a new cast house in Bahrain. Lucas outlines the goals of this new facility: “One of the main objectives of this project is to reduce GARMCO’s operational costs by internalizing our slab casting. A second objective is asset protection integrity through risk diversification. Currently, 100% of our external supply comes from Alba’s casting pit, and given that GARMCO’s own capacity is currently limited, we could not survive if anything were to happen to Alba. Overreliance on one source for material is dangerous for any business, so this new cast house will provide GARMCO with security of supply. Additionally, another main objective of the cast house project is to achieve sustainability by adopting recycling best practices. Recycling is a growing global trend and even though in the Middle East it has not gained the same popularity as in Europe or the United States, it is guaranteed to come in the near future, perhaps within the next five to 10 years.”

Fives was a logical choice for this project says François Pahmer, chief representative, Fives Middle East: “We have provided around 75% of all the casthouse furnaces that were built by the different smelters in the Gulf region.”

Moreover, Fives’ involvement shows how this service provider is moving into new areas just as its clients are, as Pahmer explained: “The Fives Group has identified aluminium as a key sector for growth and is constantly looking for new opportunities in this space. The group’s experience with casthouse furnaces provided to smelters is very extensive and we are looking to build a bigger footprint in the downstream area. It is a competitive environment, with many players capable of providing partial solutions for casthouses. However, what is much less common, and where Fives excels, is its capability of providing customized turnkey solutions for our customers, from civil works and building, to the process equipment and the plant utilities, in an EPC contract. This is how we can best combine the strengths and resources of the different Fives Solios companies and provide most valuable solutions for our customers looking for integrated solutions.”

MOLTEN METAL PARK

Having pioneered the model of locating the downstream near a smelter, Bahrain is looking to expand it further in anticipation of the new tonnage that Alba’s Line 6 will produce because as Tim Mc Laughlin, general manager of Bahrain Atomisers International explained: “Currently, the downstream in Bahrain could possibly take another 20% of their current aluminium capacity leaving about 40% to 50% to stay in Bahrain.”

To encourage new downstream industries, Bahrain is attracting new investment into the Molten Metal Park. “The biggest government incentive for the aluminium industry today is the Molten Metal Park which is a combined initiative between the EDB and Mumtalakat,” stated Kotilaine. The land has been secured for this purpose and is being administered by Mumtalakat’s sister company, Edamah, which is obtaining all the necessary approvals to establish the infrastructure and connectivity required for any operation to be set up in the park. “In parallel to Alba’s line 6 expansion,” explained Kirikian, “Mumtalakat is working on establishing joint ventures with world class companies in various aluminium downstream subsectors that can benefit from liquid aluminium supply such as high performance conductors, castings (specialty automotive wheels), extrusions and rolling (continuous casting FRP). The unique aspect of this project is that Mumtalakat is willing to invest and acquire a stake in these various downstream companies operating inside the molten metal park.”

This last point adds an extra layer of comfort to the foreign investors looking at the opportunities in Bahrain, even though Bahrain is already considered a favourable investment destination. FDI Intelligence’s Middle East & African Countries of the Future 2015-2016



Billets loaded into a cargo container to be transported across the globe. Photo courtesy of APM Terminals Bahrain.

ranking named Bahrain as number one in Foreign Direct Investment Strategy for the Middle East region and with good reason. Describing the attractiveness of Bahrain as an investment destination, Hassan Radhi, senior partner of the Bahraini law firm Hassan Radhi & Associates said: “Bahrain is a very open country, it is the most open country in the region in terms of investment. Bahrain has one of the largest free-zones in the world to the extent that there is no need for a sectioned off area; the whole country is an economic free-zone. The recent amendment of the Commercial Companies Law is creating an even more favourable environment for foreign direct investment, as it no longer requires for Bahraini shareholders. So, in terms of investing and setting up a business in Bahrain, there are almost no restrictions at all.”

LOGISTICS: MOVING MATERIAL IN AND OUT

While Bahrain enjoys strong production and an accommodating infrastructural setup, the outbound supply chain is of critical importance. A product’s timely delivery or its delay can make or break a client relationship, especially in this more difficult economic environment. An island, Bahrain has natural obstacles

to moving products via roads. Qays Zu’bi, senior partner at the Bahrain based law firm, Zu’bi & Partners, said: “One of impediments at the moment for the aluminium industry is the King Fahd Causeway that links Bahrain to Saudi Arabia. Trucking delays are a major issue for the aluminium industry because of alternative cost. The delays have improved, but not to the extent that they are no longer an issue.”

While Bahrain delivers a significant amount of aluminium products to Saudi Arabia, the better part goes out to international markets, via the ports, which are a much more reliable method of transport. As Zu’bi noted: “Bahrain’s ports are superior to many other ports in the region. For example, in other ports, freight can sometimes take six months to clear. Despite the problems with the causeway, it is still faster to ship and clear goods in Bahrain rather than directly to neighboring ports.”

Inefficiencies within ports can be caused by under-capacity, resulting in congestion and thus making it difficult to maintain high productivity. “The Khalifa Bin Salman Port has been built for the future,” said Mark Hardiman, managing director of APM Terminals Bahrain, “and as a result we have more than sufficient space for current market demands,

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Mark Hardiman, Managing Director,
APM Terminals Bahrain

meaning we can also easily maintain a very high level of productivity and efficiency. We can also supplement the KSA market—for example, whereas some nearby ports have a deficit of containers, APM Terminals has surplus capacity meaning cargo can be sent to Bahrain for consolidation and transshipment thereby making use of the surplus equipment at the same time reducing costs of evacuation for the carriers. In terms of APM Terminals' infrastructure, we have state of the art equipment, employing the leading container terminal operating system in the world and offering front-line warehouses."

While the infrastructure is indeed important to a smooth operation, just as important to the aluminium industry are the differentiated services that APM Terminals Bahrain can provide such as container stripping stuffing, and product storage including warehousing to local downstream companies in the aluminium industry with the facilities already in place.

THE HUMAN CAPITAL FACTOR

Unmatched by the other GCC countries is Bahrain's competitive edge when it comes to human capital. Bahrain enjoys a well-educated and skilled national labour force. Radhi explained: "The Kingdom started investing in formal education more than a century ago, which was very much a pioneering venture in the regional context. Developing excellence in human capital is a long term strategic project that the government has undertaken and is actively pursuing, as seen through the establishment of Tamkeen, the special labour fund, that provides training solutions for companies needing qualified technicians or engineers by paying for the training and development of available local talent."

While expatriates can still be found within many of Bahrain's aluminium companies, particularly in the senior managerial roles, there is no scramble to find experienced technicians or engineers. With an aluminium industry founded nearly four decades ago, industrial work is understood and respected and many argue that this is where Bahrain's true strength lies.



Dross segregation process. Photo courtesy of Cast Aluminium Industries.

UAE

The Aluminium Powerhouse of the GCC

Bahrain may have been the first, but it certainly was not the only GCC country to set its sights on aluminium four decades ago. With the vision of the late H H Sheikh Rashid bin Saeed Al Maktoum, Dubai sought to diversify the Emirate's economic base beyond oil and gas by signing a decree to establish DUBAL in 1975 with production starting in 1979. Built on a 4.75 sq. km site in Jebel Ali, DUBAL today operates one of the world's largest single-site primary aluminium smelters, with a hot metal production capacity of 1.035 million t/y.

The success of DUBAL helped pave the way for the UAE's second smelter, EMAL, another one of the world's largest single-site primary aluminium smelters housed on a 6 sq. km site in Al Taweelah, Abu Dhabi. EMAL Phase I, commissioned in late-2010, was the world's largest greenfield smelter development with a smelter capacity of 800,00 t/y; EMAL Phase II, commissioned in mid-2014, established world's single-longest potline, comprising 444 cells with a design capacity of 520,000 t/y. The completed smelter has a total hot metal production capacity of around 1.32 million t/y.

The ramp-up of EMAL Phase I & II was delivered in part by SNC-Lavalin, a Montreal-based company that provides EPC and EPCM services. Ezzeddine Chouikhi, director of business development in mining and metallurgy in the Middle East and Africa for SNC-Lavalin said, "Both project phases achieved first hot metal ahead of schedule and within budget, while attaining outstanding health, safety and environment performance."

In June 2013, Mubadala Development Company and Investment Corporation of Dubai announced the formation of Emirates Global Aluminium (EGA), into which DUBAL and EMAL would be integrated. "The merger," according to Kalban, "immediately put EGA among the world's five largest primary aluminium producers, with a hot metal production capacity of more than 2.4 t/y. It also allowed us to capitalize on several synergistic opportunities by centralizing the support functions (e.g. supply, finance, human capital, marketing & sales, information technology, legal) and by leveraging the operational expertise across the two plants."

EGA's first fully operational year was quite successful as Kalban recounted, "Financially,

EGA achieved sales revenues of AED 19.8 billion, a roughly 30% increase compared to the combined sales of EMAL and DUBAL in 2013; and net income of AED 3.7 billion, a roughly 75% increase compared to the combined net income of EMAL and DUBAL in 2013. The results were driven in particular by the successful ramp-up of EMAL Phase II to full production by mid-year and a continued focus on cost-reduction initiatives."

VERTICAL INTEGRATION TO THE HILT

The only major global player without upstream assets, and determined to fulfil at least part of its alumina requirements, EGA acquired Guinea Alumina Corporation (GAC) at the former's incorporation in Q1 of 2014. GAC holds a mining concession for over 50 years in Guinea's North West, a bauxite-rich region with a deposit base of approximately 1.3 billion mt of bauxite (around 16% of Guinea's total bauxite reserve) and will develop a 8 to 12 million mt/y bauxite export mine with production scheduled to begin at the end of 2017. Supporting mine infrastructure will include a rail line that will connect to a 15 million t/y multi-user port facility. The bauxite

Abdulla Kalban

Managing Director and CEO, Emirates Gulf Aluminium (EGA)

"[DUBAL & EMAL's] combined capacity of 2.4 million t/y makes EGA the largest primary aluminium producer in the GCC."

In the past six years, the GCC aluminium industry has expanded substantially. To what extent has EGA (DUBAL + EMAL) been the impetus to the growth of the sector?

The UAE smelters (DUBAL and EMAL) are the two largest facilities in the region. Their combined capacity of 2.4 million t/y makes EGA the largest primary aluminium producer in the GCC.

EGA is also a regional pioneer in the in-house development of advanced reduction cell technology that operates at higher amperages, thereby offering higher productivity per cell, lower specific energy consumption, and reduced environmental impact. Our commitment to sustainability has seen the EGA smelters set international benchmarks for per-fluorocarbon and hydrogen fluoride emissions; and led to EGA becoming the first primary aluminium producer in the region to recycle spent pot lining (this is done through the local cement industry, effectively eliminating landfill of this hazardous waste).

Aluminium is increasingly finding applications in the automotive industry. What opportunities is EGA seeing in the car manufacturing industry?

As per the analysts, we expect that growth in global aluminium demand will continue to be dominated by transport (CAGR 7.0%), for the rest of this decade – especially in automotive applications where the low density of aluminium makes vehicles considerably more fuel-efficient and better for the environment. Usage of aluminium in the transportation sector will also grow the most in terms of annual demand. Much of this growth will be driven by aluminium sheet in automotive rather than castings. This translates into growing demand for sheet ingot.

This bodes well for EGA, as rolled products, in the form of sheet ingots, account for 12% of our total production output. The major proportion of EGA sheet ingots is currently supplied to most major European rolling mills and the balance to other global consumers. Predominant usage is in the packaging industry (including foil rolled down to 0.2 mm thick) and for lithographic plates used in printing. However, EGA sheet ingots are also suitable for the growing market in the automotive sector.

Moreover, EGA is one of the largest and leading suppliers of foundry alloys to automotive manufacturers, where they are used in the manufacture of wheel rims, sub-frames, and suspension parts, cross members, engine blocks and engine cradles, among various other applications. So we are also well placed for the growing use of aluminium in castings.

One challenge the Middle East faces is the acquisition of national talent. What steps is EGA taking in order to foment the participation of the national workforce?

Emiratization is a key component of EGA's efforts to maximize its impact on the social and economic development of the UAE. UAE nationals currently comprise approximately 20% of EGA's 7,000-strong workforce in the UAE (with more than 38% of staff in supervisory roles and 45% of corporate staff being UAE nationals). The proportional UAE national representation at senior management level is currently at 70% – every measure is significantly above the UAE's industry average of 4%. As the nation's industrial flagship and already a significant contributor to the strategic diversification of the local economy, historically EMAL and DUBAL have demonstrated that a highly qualified and skilled Emirati workforce is essential to the future success of the business and the UAE. In 2015, EGA is working towards a target to recruit 340 UAE nationals across a range of disciplines and we have active talent acquisition and development programs in place to meet this goal. We place strong emphasis on the contribution, qualities and skills of employees in the belief that this is an essential framework for maintaining EGA's status as a prominent employer.

Evidencing a commitment to ensuring rewarding career opportunities for our employees, EGA provides clear development and career paths in a performance-based work culture where individuals are empowered through ownership, accountability and team support. A dedicated National Development Program includes pre-employment National Training courses for high school science graduates and holders of technical certificates; a National Graduate Training Program for university graduates in engineering and other fields; as well as internships and work placement opportunities for UAE nationals.

The EGA Scholarship Program currently has extended approximately 100 scholarships to UAE Nationals working towards a bachelor's degree in relevant disciplines and continues to be a key lever to prepare UAE nationals for a career in the aluminium sector.

What are EGA's key plans and priorities for the short- to medium-term?

Looking ahead, EGA has strong aspirations to continue to grow and expand its upstream portfolio with two mining and refining projects included in the 5-year plan. We will also continue to identify and execute opportunities to further boost our primary aluminium capacity within our current assets. Our safety and environment performance remain key priorities; as is our ongoing focus on costs and efficiencies; and innovation through continuous improvement. We also remain committed to Emiratization and are pursuing an aggressive target to boost Emiratization over the coming three years. Key strategies for recruiting and retaining UAE nationals have been identified and are being implemented.



THE FUTURE WAS OUR STARTING POINT

Emirates Global Aluminium, born from a union between DUBAL and EMAL, is the combined incarnation of these leading, global aluminium producers under a new name. Already experts in high performance aluminium, excellent service and sustainable practices, we will continue to create a lasting legacy for the UAE and promote new industry standards in a brand new world.

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Global Excellence in Aluminium

will be shipped from Guinea's Port Kamsar to the EMAL berth in Khalifa Port to be processed by the alumina refinery that EGA is planning to develop at Al Taweelah.

After comprehensive feasibility studies, EGA has partnered with leading technology suppliers who will work in collaboration with skilled local construction and service companies to construct the refinery. Specifically, Bechtel-Petrofac Joint Venture is the appointed EPCM contractor, while Rio Tinto Alcan is the Refinery Technology Provider, including Start-up & Operations Assistance; and Hatch & Outotec Joint Venture is the Digestion Design Technology Provider. As Clark explained, "Hatch holds patents and considerable Intellectual Property for many metallurgical processes, most notably the Tube Digestion process for producing alumina. With continued environmental pressures, where maximizing extraction and minimizing water and other raw material usage is key to long term business success, this places Hatch in an enviable position for assisting our clients not only in new projects, but modernizing and expanding existing operations."

Emphasizing the importance of the project, Kalban stated: "the proposed alumina refinery in the UAE will contribute substantially to securing a supply of high quality smelter grade alumina for the EMAL and DUBAL smelters. This is aligned with EGA's strategy of expansion along the aluminium value chain, allowing the company to capture upstream margins and strengthening EGA's effective position on the aluminium cost curve."

OPTIMIZATION DURING THE TROUGHS

Following one of the biggest mergers in the aluminium sector, EGA is now focusing on streamlining its operations, especially during

a period when the LME price for aluminium is low. Clark explained, "In times of depressed metal prices and lack of demand, the best way to protect the asset is to optimize and produce the highest quantity at the lowest cost, which translates into very big potential for all smelters, even newer ones in the GCC region, to increase performance and focus on cost optimization."

Chouikhi echoed this message stating, "The most significant element to optimizing operations is through the optimization of the assets as this is where the greatest efficiencies can be achieved." In the first quarter of 2015, SNC-Lavalin was awarded a component of DUBAL's Energy Optimization and Capacity Creep project that will likely continue into 2018. Chouikhi explained: "will focus on optimizing the productivity from 520 existing pots. Essentially, we will be replacing less energy-efficient pots with pots that are more energy-efficient, using design modifications developed in-house at EGA."

UAE DOWNSTREAM DEVELOPMENT

Bahrain was the first to create a robust downstream, yet the UAE downstream industry has developed significantly in the last decade, due to substantial increases in primary production. "Over the last 10 years, the primary sector in the UAE has gone from producing less than 600,000 t/y of primary metal to 2.4 million t/y," stated Modar Al Mekdad, general manager of Gulf Extrusions, a downstream player founded in 1976 and the flagship company of the conglomerate Metals Industries, the holding group for a number of extrusion and downstream businesses.

In May 2011, Gulf Extrusions entered in a JV with Senaat General Holding, one of Abu Dhabi's largest industrial investment holding

companies to establish Taweelah Aluminium Extrusion Company (TALEX), which will operate over 100,000 t/y of production capacity. This US\$200 million investment will make Senaat the largest global customer of EGA, which will bring significant synergies to all of Senaat's projects in aluminium. In addition to TALEX, Senaat has invested AED 220 million into a JV with Dubai Cables (Ducab) to start producing aluminium alloy rods, wires and bare overhead conductors during Q2 2016.

Senaat's acting CEO, Jamal Salem Al Dhaheer, explained Senaat's AED 5 billion investment to develop downstream industries: "We recognized at an early stage that the unique position of Abu Dhabi, with its privileged conditions and industrial framework, will allow Senaat to become a relevant player in the high value add products market. As such, the development of downstream aluminium plants has become core to Senaat's strategy." While established players like Gulf Extrusions and investment holding companies like Senaat are marking the largest waves in terms of investment dollars, a number of smaller downstream players are starting to pop up, such as OSE Industries, a highly specialized aluminium extrusion company that was established in 2012 and began operations with two extrusion presses with a capacity of 10,000 t/y. Establishing operations in the UAE was very strategic for OSE industries, according to CEO Magdy Samoul. "Dubai is very well connected from a logistics standpoint and it is relatively easy to import and export product. In addition, OSE Industries benefits from its proximity to DUBAL [which] provides OSE industries with primary high quality alloy that can be delivered from its site to our plant within 20 minutes."



DX Technology cells in Potline 1 at EMAL. Photo courtesy of Emirates Global Aluminium (EGA).

UAE: SETTING UP FOR SUCCESS

Aluminium in the UAE has and will continue to grow, but in order for the sector to continue expanding and developing downstream, it needed to find a new home. Waheed Ahmed, general manager of Cast Aluminium Industries, a prominent dross recycler in the region, highlights the issue: "One challenge that Cast Aluminium Industries had to overcome was the site size constraint in Al Quoz. When Cast Aluminium Industries was first established in Al Quoz, this was Dubai's only industrial area allocated by the authorities. However, the growth of Dubai has been robust over the last three decades. The enormous growth

in the real estate sector has rendered Al Quoz the heart of the city."

As aluminium companies were dealing with the effects of urbanization encroaching on industrial areas and business slowing down as transportation and documentation processes became more complex, the Abu Dhabi government provided a solution in the form of a new industrial zone, Kizad, where many are setting up new operations, including Cast Aluminium Industries. "To accommodate existing and expected new business, Cast Aluminium Industries will need a much larger facility in Kizad, as the company currently only has 8,000 sq. m in Al Quoz. Cast Aluminium Industries is looking to expand into 33,000 sq. m, with what will be a state of the art facility. With the civil contract already awarded, the goal is to start construction by the middle of 2015 so that operations can begin in the fourth quarter of 2016," explained Ahmed.

Conceptualized as part of Abu Dhabi's 2030 vision, a 25-year road-map for economic development aimed to diversify the economy away from oil and gas revenues, Kizad is a world-class, state-of-the-art industrial complex built to harness industrial diversification for industries from aluminium to petrochemicals and food to paper, print, and packaging on its 417 sq. km greenfield site. Martijn Van De Linde, CEO of Abu Dhabi Terminals, with its core business being the operation and management of the Khalifa Port Container Terminal within Kizad, explained: "What dif-

ferentiates Kizad is that the industrial zone is integrated with the port. It takes exactly 12 minutes for trucks to enter the port with their product, drop it off, and exit. From the moment that the product is put into a container it can be on the ocean within an hour. This level of efficiency can only be achieved when the industrial zone is integrated with the port."

"The master plan behind Khalifa Port and Kizad is one rife with innovation as we were not building for 10 years down the road, but rather 100 years down the road," said Mohamed Juma Al Shamisi, CEO of Abu Dhabi Ports.

Kizad has some of the most modern infrastructures with a pioneering design, evi-



Quality Aluminium Extrusions

OSE Industries is a UAE, Dubai based company established in 2012. The company specializes in aluminium extrusion, beginning its first phase with two extrusion presses, 2750T for MPE tube and 1800T to extrude precision tubes, intercooler, evaporative and heat exchanger tubes as well as industrial profiles.

Our target market is HVAC for Automotive and Air-conditioning industries, where aluminium is replacing conventional systems (fin and copper tube). There are numerous advantages in using aluminium multi-port extruded tube over conventional copper where the coil has a smaller size, less weight, high efficiency and less refrigerant.

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Website: www.oseindustries.com







Magdy Samoul, CEO, OSE Industries



Waheed Ahmed, General Manager, Cast Aluminium Industries



Martijn Van De Linde,
CEO, Abu Dhabi Terminals

dened through very wide roads, ample land to allow for expansion, numerous culverts and ducts to enable all of the factories to connect to utilities, as well as additional room for pipelines in the future. The uniqueness of this industrial zone is that it is constructed in vertically integrated clusters such as heavy industry and its respective midstream, downstream and logistics components. "In laying out Kizad," Shamisi said, "we reserved one of the clusters around EMAL precisely for the aluminium industries. This alone of-

fers a great boon to the aluminium industry. Kizad's objective for this sector was to offer a platform to consolidate the fragmented, expansive aluminium business and reduce operating expenses, by having prime land, with state-of-the-art infrastructure already in place, allowing it to become a matter of plug-and-play."

While being located minutes away from EMAL alone is a big draw for aluminium companies, a "Hot Metal Road" further sweetens the deal. EMAL includes a liquid metal transfer ("LMT") facility that, together with the dedicated Hot Metal Road, enables the transfer of hot molten aluminium from the smelter directly to downstream industry within the cluster. For aluminium downstream players, the benefits are great: "The capacity to supply liquid metal to downstream industries within the Kizad aluminium cluster will give these companies the ability to create innovative new products. They will also benefit hugely by eliminating shipping costs, massive reductions in energy usage through not having to re-melt cold product, and lowered CO2 emissions, thereby enhancing their environmental credentials," noted Kalban.

Kizad already has 71 investors assigned to zone A and a few interesting tenants in aluminium besides EMAL, including TALEX, Du-



Mohamed Juma Al Shamisi,
CEO, Abu Dhabi Ports

cab and Cast Aluminium Industries. While in the supporting downstream clusters important international players like Al Braik, Morgan Advanced Materials and Saif Al Kahili Group for the caustic soda are setting up to support the aluminium and steel industries. With a number of aluminium companies scheduled to become operational in 2015 and 2016, Kizad already looks to be not only the answer to consolidating the aluminium industry, but a major factor that will push it forward, taking the sector to the next level.



Fives' Green Anode Plant at Sohar Aluminium. Photo courtesy of Fives.

Looking at the GCC at Large

Regional efforts to increase competitiveness in a depressed market are rooted in governmental and private sector initiatives.

While each country has its own unique value proposition and challenges, there are certain trends that transcend borders and affect the region as a whole.

CHINESE DUMPING AND LME PRICE DECLINE

With a globalized economy, various dynamics abroad affect the aluminium industry in the GCC region, with the leading trend being the oversupply of Chinese products.

"Uncertainty surrounding China's aluminium industries is one of the reasons that the price of aluminium on the London Metals Exchange has fallen," argues Forakis, "virtually all of the aluminium that China produces stays within the country [...]. As the Chinese economy has slowed down, domestic consumption has consequently slowed down as well, creating a surplus."

In response, the Chinese government removed export duties to address this surplus in order to maintain the local producers afloat. On a global scale, however, aluminium that was previously not being exported is now available on the world market. Forakis posits the industry-wide concern: "The LME price has

dropped slightly, but of greater concern is that premiums have dropped significantly."

China's decreased local demand affects GCC smelters in that it impacts the demand, supply and price of the global aluminium market. In theory, the high cost producers should reduce capacity, but GCC smelters operate on a lower cost curve, and will continue to produce without reducing capacity. China produces around 30 million t/y. Exporting two million t/y may mean peanuts to China, but for the rest of the world, this is a large amount to swallow.

The aluminium industry in the GCC region, however, remains resilient, believing that this concern brought on by China will correct itself within the next two years. Already, the industry has seen China begin to buckle under the pressure as evidenced by the announcement from Aluminum Corp of China (Chinalco), the country's top producer of the metal, that it plans to shut down its biggest smelter, accounting for about an eighth of its total capacity, due to the low aluminium prices. Said Al Masoudi, CEO of Sohar Aluminium, takes a more positive view of the situation: "This pressure has forced smelters, especially in the

GCC region, to become more innovative and efficient in order to withstand price pressures until the market comes back to a balance."

NATIONALIZATION OF THE WORKFORCE

In a region where competitiveness tends to revolve around cheap energy and hydrocarbons, the GCC countries are moving to a different level where the focus is on the development of local talent, skills and knowledge to produce a better value proposition for the countries to offer to both employers and employees. Each country is emphasizing the importance of boosting human capital competitiveness through nationalization efforts in order to maximize local employment and minimize the need for expatriates in the workforce, with the ultimate goal of increasing the standard of living and benefits to their respective citizens.

"From the perspective of GCC countries, there are great advantages to recruiting locally. GCC countries have nationals that are well educated and some have very good experience," argued Christians Cruz, managing director of MGR Management Consulting, a recruitment services firm based in Dubai. "The aluminium

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Said Al Masoudi

CEO, Sohar Aluminium



"The vision was to build an aluminium smelter that would maximize the energy by creating value-added products and also create jobs in a densely populated area."

With the first pot coming on line in 2008, Sohar Aluminium is one of the younger smelters in the GCC region. Please provide us with a brief introduction to how Sohar Aluminium got started.

The city of Sohar has played a historical role in Oman on two main fronts; maritime and mining. Hundreds of years ago, this area exported copper from mines located very close to our site. Sohar was the capital of Oman in the past during several eras and had for years captivated the hearts of historians, travellers, poets and merchants. Hence, and with the industrial evolution and rapid economic growth that the city has witnessed at the beginning of the new millennium, there was no better location for our company to be established in. Sohar Aluminium is reviving that mineral industry and tradition, as part of the Sultanate of Oman's Vision 2020 to diversify the economy from crude oil exports.

The vision was to build an aluminium smelter that would maximize the energy by creating value-added products and also create jobs in a densely populated area. The government has laid a very solid foundation for industrial capacity through modern infrastructure, access to competitive energy, and a very deep port that opens the country to not only the Arabian Sea, but also the Indian Ocean through the Sea of Oman.

Sohar Aluminium currently produces 375,000 t/y. Does Sohar Aluminium have any plans for expansion in the near-term?

Sohar Aluminium currently produces 375,000 t/y through three main product lines: liquid metal for the downstream (30% of production), ingots for domestic and international markets (50% of production) and sows (20% of production). The plant itself is designed for more than one pot line, however, at the moment, expansion is not the focus. We have invested in optimizing the existing infrastructure and pot line, which will allow us to creep up our current amperage and increase production, while becoming more efficient in our operations. Such optimizations can bring Sohar Aluminium to produce 390,000 t/y; however, that will still require addressing other important aspects like modifying the carbon plant, and other efforts required to ramp up production. These initiatives are in the pipeline in the medium term which will help us to achieve higher production by 2020.

Sohar Aluminium intends to direct 60% of its production to the local downstream. Can you tell us about Oman's downstream aluminium industry and how this 60% figure will be achieved?

Sohar Aluminium helped to establish and supplies to two downstream companies; Oman Aluminium Processing

Industries Limited (OAPIL) and Oman Aluminium Rolling Company (OARC). Once the OARC ramps up its production, increasing its input requirements, Sohar Aluminium will supply more liquid metal to achieve that 60% figure.

These are the only two downstream companies we have at present, but Sohar Aluminium is open to working with any downstream and any private sector company if we have the metals available.

Sohar Aluminium, is owned by Oman Oil Company, TAQA and Rio Tinto. How does Sohar Aluminium benefit from having Rio Tinto Alcan as an owner?

Sohar Aluminium is the first smelter in Oman, but looking at aluminium across the region, the trend shows that every smelter within the GCC began with foreign participation. Having the support of Rio Tinto Alcan has positioned Sohar Aluminium on a world-class level since day one. Rio Tinto has brought its state of the art technology, which is the AP technology, and has helped us in implementing and executing international operational standards, whether related to safety or operational efficiency, which were relatively new to Oman. Having Rio Tinto on board has swiftly transformed Sohar Aluminium into an internationally recognised company, not only through its expertise and technology, but through the ability to source materials from time to time, as well as supplying us with raw materials, like alumina.

What do you consider to be the greatest external challenges facing aluminium production in the gulf and how is this part of the world uniquely positioned to address them?

The global aluminium industry is going through a difficult two years with China's slowing growth. Chinese products, which have traditionally remained in their local market, have infiltrated the international market which has put significant pressure on the industry. On a positive note, this has forced smelters, especially in the GCC region, to become more innovative and efficient in order to withstand price fluctuations until the market comes back to a balance.

One trend that is uniquely affecting the Gulf countries is that the currencies in this region are pegged against the US dollar, whereas many countries are experiencing currency depreciations. Using the example of Russia, its aluminium sector is slowly gaining momentum through its weakened currency against the US dollar which makes labour and materials cheaper. This makes Russia more competitive even if their energy costs are higher. Having said this, even if the LME price is down, like any commodity, it is cyclical; it becomes a question of how one will manage through these times. The GCC is well-equipped to take on this challenge.

industry can provide their newly graduated GCC nationals with the opportunity to gain working experience which is so important for the success of the GCC countries."

As the industrial flagship of the UAE and already a significant contributor to the strategic diversification of the local economy, EGA considers "Emiratization" a key component in its efforts to maximise its impact on social and economic development. "UAE nationals currently comprise approximately 20% of EGA's 7,000-strong workforce in the UAE, while the proportional UAE national representation at senior management level is currently at 70%," said Kalban.

EGA is working towards a target to recruit 340 UAE nationals across a range of disciplines through their active talent acquisition and development programmes in place to ensure rewarding career opportunities. Similarly, Sohar Aluminium considers the development of its people to be an integral part of its operations: "Sohar Aluminium enjoys one of the highest percentages of local employment, with 73% Omanisation and has achieved this through investments in training," stated Al Masoudi.

However, nationalizing the workforce is not something that happens overnight. Alba has achieved 88% Bahrainization, but one must remember that the smelter has been in operation for over 40 years. For newer smelters, this challenge persists: "Qatarization is one of Qatalum's goals, but it is the most difficult target for us to achieve," explains Khalid Mohammed Laram, CEO of Qatalum. "The Qatari population is small and they have many opportunities in other industries such as oil and gas: a smelter is not an ideal place to work in. Qatalum has a five-year plan to attract more Qataris, but it will be difficult to achieve. For now, Qatalum relies on foreign expertise, employing people from 41 different countries. To really grow Qatari participation in the aluminium industry, the country will have to grow its downstream sector, which right now only includes two extrusion companies."

While the smelters are making significant progress toward nationalizing the workforce, likewise, private companies are doing the same because it is just good business. Pyrotek, for example, is very focused on employing the maximum number of Bahraini's within the organization. "At present," said Majeed, "98% of our employees are from Bahrain and our goal is to achieve 100% Bahraini employment. From a business perspective, it makes sense to employ locals as the talent is already here. The Bahrain workforce is well educated and there is no need to go overseas to acquire the talent we require for our operations."

GCC: A NEW FRONTIER FOR INNOVATION

The GCC has distinguished itself as a region constantly pushing itself to innovate as is easily seen through its infrastructure developments and projects, however one might be surprised by the innovation taking place in the industrial sectors. It is easy to assume that the aluminium industry in the GCC would rely on importing technology and processes from the Western world that has a longer history working in this sector, but that would be mistaken. EGA, for example, is the only smelter in the region to have developed its own proprietary technology, DX & DX+ Technology, and is already transferring its home grown technology to the neighbouring smelters, as evidenced by Alba's decision to utilize EGA's DX+ Smelting Technology for its Line 6.

Innovation is not limited to the giants in the industry. "Every year, Gulf Extrusions invests into research and development and has developed a strategy to make an environmentally friendly plant, which is built on three main pillars: raw material, process and green end products," explained Al Mekdad.

Gulf Extrusions has successfully implemented and patented a product, X-ECO, an alloy made from over 80% post-consumer recycled content, reducing the carbon footprint by 60-to-80%. "This number is very significant when we consider that for every tonne of primary aluminium,



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Khalid Mohammed Laram

CEO, Qatar Aluminium (Qatalum)

"The global automotive industry is increasingly in need of aluminium parts and Qatalum is well-positioned to meet this demand."

Can you provide us with a history and introduction to Qatalum and its plans to increase production?

Qatalum has two shareholders, which each hold 50% of the company: Qatar Petroleum and Norsk Hydro. The plant started up toward the end of 2009 and by 2014 was producing 610,000 t/y, more than the 585,000 t/y for which plant was originally designed to produce. Today, Qatalum produces 640,000 t/y of primary aluminium in the form of extrusion ingots and foundry alloys. 95% of the products are export and 60% of Qatalum's ISO/TS 16949 certified products go to the automotive industry; a percentage which we hope to increase. At present, Qatalum is not looking to expand, but instead focuses on maximizing benefit out of the existing assets. We have studied the limitations in our plants and are trying to boost production to overcome them.

Qatalum is placing a high focus on the automotive industry. Why is Qatalum more focused on the automotive sector than, for example, the infrastructure sector where there is a lot of domestic demand for aluminium pieces?

The global automotive industry is increasingly in need of aluminium parts and Qatalum is well-positioned to meet this demand. The automotive sector requires aluminium that must meet a minimum quality and producers must have ISO/TS 16949 certification. There is a lot of infrastructure demand in Qatar today, but the downstream industries are unable to meet the need of the local market. The majority of finished aluminium products for infrastructure are imported.

Qatalum is 50% owned by Norsk Hydro. What value does Hydro provide to Qatalum?

If you mention Qatar to foreigners, they will likely refer to Qatar as an oil and gas country. Qatalum is the only smelter in Qatar and locally we did not have the experience or technology to operate this plant. Hydro provides us with its technology, which is constantly being improved and further developed in its research center, and Qatalum has an agreement with Hydro in which Hydro will supply us with people to assist in operating our plant for a certain period, during which time we are developing our own people. Hydro also provides support to us when it comes to marketing our products and helping us to obtain a good price for raw materials from the market.

The GCC is very determined to promote Nationalization. How important is "Qatarization" to Qatalum?

"Qatarization" is one of Qatalum's goals, but it is the most

difficult target for us to achieve. The Qatari population is small and they have many opportunities in other industries such as oil and gas: a smelter is not an ideal place to work in. Qatalum has a five-year plan to attract more Qataris, but it will be difficult to achieve. For now, Qatalum relies on foreign expertise, employing people from 41 different countries.

To really grow Qatari participation in the aluminium industry, the country will have to grow its downstream sector, which right now only includes two extrusion companies. Until recently, investors have been focussing on high and quick return on investment, but we are now starting to see investors approach Qatalum to discuss the potential for downstream investments in Mesaieed Industrial City (MIC), where Qatalum is located. This is due in part to the education and advice Qatalum is imparting to the business community in Qatar through forums and conferences.

How has Qatalum shifted its focus during this aluminium down cycle?

In this more difficult pricing environment, Qatalum is focusing on how to improve costs. This does not mean simply cutting costs, but improving productivity. This is done through increasing the utilization of our own people, reducing manning from contractors, and, very importantly, enhancing safety performance. Fewer incidents mean fewer breakdowns and stops to production. If we take an average of what we call recordable incidents and benchmark Qatalum against the other GCC smelters and Hydro smelters around the world, Qatalum is performing better, respectively.

Qatalum has a very strong HSE team and also coordinates with MIC. MIC has its own safety program, so we are learning from them and they are learning from us.

Improving productivity is one aspect to surviving a more difficult business climate, but it's also becoming more challenging to get new customers and so we must work to maintain our existing clients. To keep existing customers happy, Qatalum is working to improve on-time delivery. Clients, particularly those in the automotive sector, are looking for consistency in product delivery and this is one of the main reasons clients prefer to work with us.

As the newly appointed CEO, what are your strategic priorities for Qatalum in the next three to five years?

Qatalum's top priority is to be on top of the CRU cash cost curve. In 2012, our place was #22 and today we are #3, just behind Sohar and Ma'aden. Qatalum also wants to see more of its products utilised in the global automotive industry and downstream within Qatar and to depend more on our own people for the operation of our plant.

we emit 11,000 kg of CO₂. Even though these products use high levels of recycled aluminium, this product still maintains excellent mechanical properties and excellent surface finish. This product also helps designers and architects to achieve LEED (Leadership in Energy and Environmental Design) certification for their prestigious construction projects."

OSE Industries, through its innovative products, is looking to shakeup two globally significant industries: automotive and cooling. It is doing this by increasing awareness to the benefits of replacing copper in certain extruded products with aluminium. "The main technical comparison between copper and aluminium is that when copper tubes with aluminium fins for the condenser coils are used, galvanic corrosion can occur; however, when using aluminium tubes with aluminium fins this does not occur with the use of a technology called parallel-flow condenser. Whereas with the copper there is opposition in the direction of the refrigerant—the gas for cooling—because of the way it is built; with aluminium, the gas flows in parallel, making it more efficient with the absence of resistance to the gas flow," explained Samoul. "Another separate but important comparison is that when you are filling the refrigerant into the aluminium (microchannel system), you are saving around 35-to-70% of the refrigerant, which is an ozone contaminant. Technical aspects aside, aluminium is more attractive than cop-

per from a pricing perspective. Not only is aluminium currently cheaper than copper, but the price of the copper fluctuates more. In addition, the availability of copper is quite small in comparison to aluminium," he said.

Even service providers are innovating to service their smelting and downstream clients. Turk Mechanical Industries (TMI) is one such company. Based in Bahrain, TMI specializes in the fabrication and manufacture of consumable parts for the aluminium industry and has achieved penetration across the GCC smelting market. While TMI does not have a research and development department, its products are inherently of high quality and it has developed its own technology through trial and error and client cooperation. Khalid Turk, director of Turk Mechanical Industries (TMI) and CEO of Turk Heavy Transport (THT), provided an example: "TMI designed, casted and supplied tapping tubes for passing molten metal aluminium, with a special composition using Alba's feedback to improve the product. The product has a longer life and is, therefore, more economical for Alba. TMI's focus is to assure that the parts supplied are comparable or better than what foreign competition produces."

Another Bahraini service provider, TAHA International Corporation (TAHA), has innovated to provide an alternative method to traditional and commonly used forms of dross recycling. TAHA has patented a two-stage process



Khalid Turk,
Director, Turk Mechanical Industries (TMI)
and CEO, Turk Heavy Transport (THT)

that requires neither extra energy nor salt, yielding no toxic material by-product. "TAHA's onsite operations avoids the need to reheat the dross," explained Frank Pollman, CEO of TAHA, "and, due to this rapid, low-energy process, up to 90% of available metal in the dross can be recovered in the first stage and can be returned immediately to the original furnace without further alloying."

What's important to note about these innovations is that they are not limited to one country or another. These products and services are being invented and designed in the GCC and are being shared with the world.

We would like to thank everyone who took the time to participate in the research we conducted while in the GCC. The final report will appear in the January/February 2016 edition of Aluminium International Today, and in GBR's Industry Explorations investment guide: GCC Aluminium 2016, coming out in March 2016.

If you would like to be interviewed for the reports as we continue to examine aluminium in the region, please contact Josie Perez (jperez@gbreports.com).

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