

# All Roads Lead to Here

In this first part of a two-part investigation, Global Business Reports looks at the winning formula behind the GCC's plan to attract future investment in primary and secondary aluminium 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 (mt) 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.

Recognising the energy-intensive nature of the industry, the leadership of the Gulf Cooperation Council (GCC) countries (of which the UAE, Qatar, Bahrain and Oman are members) saw an opportunity: "The countries of the region have taken wise steps to benefit from their resources and diversify their economies. The aluminium sector represented a logical path for such countries to industrialise their economies," explained Joseph



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

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 successful 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 cheap 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 mt of aluminium at the same point in time."

The second factor is financial strength,



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

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.

The following content is provided by Global Business Reports ([www.gbreports.com](http://www.gbreports.com))



EGA's primary aluminium production capacity of 2.4 million tonnes per year places the business among the five largest in the world. Photo courtesy of EGA.

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 mt/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 five million mt/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. ■

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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 endeavor to diversify the economy away from oil and gas by exporting billets, Alba has now grown to produce roughly 932,000 mt/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: "Maximise 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 capitalising on existing infrastructure and systems already in place for cost efficiency, that will bring Alba's production up to roughly 1.5 million mt/y, making Alba the largest single-site smelter in the world."



Tim Murray  
CEO, Aluminium Bahrain (Alba)

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 mt/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 utilising human capital in downstream production."

Though the aluminium LME price is currently in a trough, Murray maintains confidence going forward with the 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."

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



Billets are inspected by a Port worker.  
Photo courtesy of APM Terminals Bahrain

and demand rebalances and prices rise again."

Considering the long-term outlook for aluminium, Murray is less concerned about the current low price of aluminium: "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-tonne to build, Line 6 will probably be the best project in the world."

#### 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, (Balxco), 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 Balxco 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 endeavors 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 mt/y, while Midal Cables produced 12,000 mt/y. Today, Alba stands at around 900,000 mt/y while Midal Cables stands at 300,000 mt/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 of the opportunity to be near their clients to ensure efficiency of service. One such company was Pyrotek, a recognised 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 5,000m<sup>2</sup>

plant at the Askar industrial area near Alba. Nigel Clear, General Manager for the region for Pyrotek, explained: "This move is part of the company's global strategy to locate operations 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 casthouses." The presence of such a warehouse facility relieves plants of considerations that are non-core to their business. Clear added: "Pyrotek is able to support customers' reduction of their inventory by offering the opportunity to stock 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 specialised distribution. This responsive service becomes key, since the lead-time for customised material can sometimes be longer than our customers are able to accommodate."

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 casthouse 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



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by internalising 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 casthouse 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 said 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 customised 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 favorable investment destination. FDI Intelligence's Middle East & African Countries of the Future 2015-2016 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

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Mark Hardiman, Managing Director,  
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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, 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 as 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 contains 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



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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 mt/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 800,000 mt/y; EMAL Phase II, commissioned in mid-2014, established the world's single-longest potline, comprising 444 cells with a design capacity of 520,000 mt/y. The completed smelter has a total hot metal production capacity of around 1.32 million mt/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 million mt/y. It also allowed us to capitalise on several



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

synergistic opportunities by centralising 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 an eight 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 mt/y multi-user port facility. The bauxite 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



Magdy Samoul, CEO,  
OSE Industries



Waheed Ahmed, General  
Manager, Cast Aluminium  
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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 and 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 maximising extraction and minimising 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 modernising 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."

#### Optimisation 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 optimise 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 optimisation."

Chouikhi echoed this message: "The most significant element to optimising operations is through the optimisation 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 Optimisation and Capacity Creep project that will likely continue into 2018. Chouikhi explained: "This will focus on

optimising 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 mt/y of primary metal to 2.4 million mt/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 mt/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 Dhaheri, explained Senaat's AED five billion investment to develop downstream industries: "We recognised at an early stage that the unique position of Abu Dhabi, with its privileged conditions and

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industrial framework, will allow Senaat to become a relevant player in the high value added 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 specialised aluminium extrusion company that was established in 2012 and began operations with two extrusion presses with a capacity of 10,000 mt/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."

#### UAE: Setting up for success

In order for the aluminium 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, highlighted 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 urbanisation 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 8,000m<sup>2</sup> in Al Quoz. Cast Aluminium Industries is looking to expand into 33,000m<sup>2</sup>, 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.

Conceptualised 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, food, 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 differentiates 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, evidenced 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 offers 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



Martijn Van De Linde, CEO, Abu Dhabi Terminals

usage through not having to re-melt cold product, and lowered CO<sub>2</sub> 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, Ducab and Cast Aluminium Industries. While in the supporting downstream clusters important international players include Al Braik, Morgan Advanced Materials and Saif Al Kahili Group for the caustic soda are setting up to support the



Mohamed Juma Al Shamisi, CEO, Abu Dhabi Ports

aluminium and steel industries.

At the same time that Abu Dhabi was developing Kizad, it was improving the logistics as part of the government's 2030 vision.

Now With a number of aluminium companies scheduled to become operational in 2015 and 2016, Abu Dhabi's Kizad and logistical and infrastructural investments look to be not only the answer to consolidating the aluminium industry, but major factors that will push it forward, taking the sector to the next level. ■