
# With new glycol plant coming in Texas, **EQUATE Enhances Global Presence**

## Focused on operational excellence driving profitability

The EQUATE Group may not yet be a household name in the petrochemical industry, but with the outstanding success it has achieved in only a couple of decades of existence, it should be. The group is reporting all-time highs in profitability and earnings. For the first half of 2018, it reported record-breaking EBITDA of $1.15 billion, an increase of 34% over the same period last year. First half net profit was $862 million, up 56% from firs–half 2017.

And it is capitalizing on the opportunity presented by US shale gas, constructing a new 750,000-m.t./year (EG) plant in Oyster Creek, Texas.

"The formula for this kind of success is a combination of strategic partnerships, operational excellence, innovation and extraordinary customer service," said EQUATE president and CEO Dr. Ramesh Ramachandran.

"We serve our customers to a degree that cannot be matched," he said. "We are probably the most successful joint venture in the petrochemical industry."

Commencing production in 1997, EQUATE is the owner and single operator of several fully integrated world-class petrochemical complexes in Kuwait, North America and Europe that annually produce over 6 million tons of the highest quality grades of ethylene, ethylene glycol (EG), polyethylene (PE), polyethylene terephthalate (PET), polypropylene (PP), styrene monomer(SM), para-xylene(PX), heavy aromatics(HA), and benzene(BZ). They are marketed throughout Asia, the Americas, Europe, the Middle East and Africa.

The EQUATE Group's shareholders include Petrochemical Industries Company (PIC) and The Dow Chemical Company (Dow), as well as private sector supporters Boubyan Petrochemical Company (BPC) and Qurain Petrochemical Industries Company (QPIC). "Having the support of two key shareholders, Dow and PIC, as well as our other shareholders Boubyan Petrochemical company (BPC) and Qurain Petrochemical Industries Company (QPIC) - allows us to identify and implement the best business and operational practices across the globe," said Ramachandran. "Dow enables us to operate with work processes that have always been at the cutting edge of the industry. PIC translates the vision of His Highness the Amir of Kuwait–that the country's natural resources have to be upgraded and not exported.  PIC enabled us to locate 50% of our operations in a strategic location to serve the region with the greatest growth in our industry. We took the best of each company to train EQUATERs who have delivered extraordinary results."

Senior Vice President Naser Aldousari said the company's focus on efficiency and its global assets have also enabled its success, "Our competitive advantage is primarily due to being an ethane-based producer," said Aldousari. "Our advantage is also sourced in our geographic diversity. We ship 5 million m.t./year of commodities into markets that are all growing better than their regional GDP. We capitalize on our geography and integrated supply chain, as well as on our long-term relationship with customers. In a commodity business, we differentiate ourselves with our service."

MEGlobal manufacturing site, Alberta, Canada.

Unmatched product quality.

### Built–in from the start

Those characteristics were built into the EQUATE Group from the start, Aldousari explained. "EQUATE's operations started in Kuwait as part of the economic diversification program, launching the first Kuwait–based JV for PIC, a subsidiary of Kuwait Petroleum Corporation. It has been a cross-cultural, cross-geographical organization from the start. That commitment and direction comes from our shareholders and is implemented by EQUATERs - our team members - across the globe."

The EQUATE Group features a tight organizational structure and close attention to detail, according to Ramachandran.

"We try to keep things simple and targeted on clear goals," he said. "We focus on the key aspects – safety, operational excellence and customers. There are no other distractions and it is a small product line. That's what enables us to deliver. We are a lean organization and that helps a great deal in both communication and execution."

EQUATE has been, and remains, an example for several breakthroughs in Kuwait and the Middle East.

"EQUATE's operations have received several awards for safe operations, the most recent being 50 million hours of safe operations – a record unmatched in our industry," said Ramachandran.

In the world of finance, EQUATE became the first Kuwaiti company to issue 144A transaction bonds that are tradable in the United States at a value of $2.25 billion in 2016. The bond issuance is considered the largest ever in Kuwait's private sector and it is the Arabian Gulf's largest bond issuance since 2014. Corporate bond and sukuk bond issuance for the post finance of an acquisition was a unique experience for Kuwait banks but this has become the benchmark for other Kuwait companies today.

"The sukuk issue was very successful," said Ramachandran. "The pricing was tighter than traditional bonds and there are some additional legal requirements, but fundamentally they are no different than other bonds." One major benefit is that sukuk opens a significant pool of capital that would otherwise be closed to Western debt.

The other hallmark the EQUATE Group has been profitability. "Our total cost to serve is very low, enabling us to be in the first quartile for our markets," said Ramachandran. "Whether it is PE in Kuwait or glycol in Canada, Kuwait or the US, we have a feedstock advantage. Also, our mechanical reliability due to the continuous focus on operations excellence is very high, close to 100%, which benefits our customers. The board recognizes the importance of operations excellence and EQUATE's proactive investment in maintenance and safe operations as a high percent of RAB (replacement asset base) shows in our results. These capital investments on reliability are a hallmark of EQUATE across the globe."

If anything is a special feature for EQUATE, it is customer longevity. "Most of our major customers have been with us a very long time due to the value that we bring to them," Ramachandran said. "We know them and they know us. That allows us to collaborate in changes and in growth. Most importantly, customers know that EQUATE operates reliably and will always deliver"

### Growing on the US Gulf Coast

EQUATE always has an eye for opportunity and after acquiring MEGlobal in 2015, it is now the world's second largest producer of EG. In 2016, it became the first Kuwaiti petrochemical company to establish an industrial complex in the United States and the first in the Middle East to benefit from US-based shale gas. A new greenfield unit is well under construction in Oyster Creek and will produce 750,000 m.t. It is scheduled to begin production in the fourth quarter of 2019.

Ramachandran said while there is additional supply predicted to come online globally within the next three years, he is confident that EG demand will continue to grow and EQUATE will be well-positioned to be cost-effective and meet global customer needs, particularly with its new location on the US Gulf Coast.

"We went through an elaborate search worldwide before we landed on Oyster Creek as the location for our new 750,000 m.t. EG plant," he said. "The location allows us to be close to Dow's new ethylene cracker at Freeport, and so we benefit from the US shale-gas advantage."

In North America, about 70% of the EG is used for polyester; 25% for engine coolant, and 5% for other uses. In other parts of the world the coolant segment is significantly smaller. In Asia, polyester production is over 95% of all EG consumption.

Jim Ashworth, Commercial Director for MEGlobal Americas, added that the new site is in a perfect spot to meet market needs. "EG is growing faster around the world than it is in North America so you need to be able to access the areas of growth with a strong logistics capability and consistent high quality," he said. "The highest purity grade of EG is for polyester; it has the most stringent requirements. About a third of a polyester fiber or PET bottle is EG, and the critical element is how it reflects ultraviolet light. We are able to meet those requirements."

Another competitive advantage being built into MEGlobal's Oyster Creek Site is its $CO_2$ offtake. "It is a process byproduct and we are permitted to emit it," said Ashworth. "EQUATE is committed to minimize its carbon dioxide emissions. One of the best achievements in this area is that in Oyster Creek, MEGlobal will transfer it by pipeline to an industrial gas company for use in industrial markets. There is an environmental benefit from this sustainable capture and reuse and the quality of the $CO_2$ we provide is a significant raw material and market advantage to our partner."


Groundbreaking of the new world-scale ethylene glycol (EG) manufacturing facility in Freeport, Texas, USA.

The third dimension to a world-scale greenfield plant, after feedstock and location, is supply chain. And here shows the wisdom of the US Gulf Coast site. "That region is known as a fantastic hub, mostly for the density of the manufacturing infrastructure," said Ramachandran. "But it does not get enough credit for logistics with facilities like the Port Freeport, Texas to China has a major supply chain advantage because of the backhaul and port infrastructure."

He noted glycol also has advantages upstream and down. "About 40% of global EG production is based on ethylene derived from naphtha, which has a cost disadvantage to ethylene made from ethane derived from shale gas. Other Middle Eastern companies have been trying to get onto the Gulf Coast and we're years ahead of them."

Clarence Stadlwieser, Project and Technical Director for MEGlobal, said EQUATE licensed the METEOR™ Technology from Dow, which is a well-established proven process with more than two decades of operation. The same process is used at the MEGlobal plant in Prentiss, Alberta, and at EQUATE's plants in Kuwait. The new Texas train will produce about 700,000 m.t/year of monoethylene glycol; 50,000 m.t./year of di-ethylene glycol and a small amount of heavier byproducts.

Fluor is the main construction contractor and as their construction crews round into the last year of work. The MEGlobal operating staff has already been hired and is being trained.

"We are very fortunate to be in that community," said Stadlwieser. "We have already been able to attract and hire top people and look forward to participating more and giving back."

Ramachandran also effused about the local officials. "I would like to give a shout out to the Brazosport community who have been extraordinarily welcoming. They were helpful with everything from tax abatements to talent." EQUATE officials and community members have already been getting acquainted through events such as the Oyster Creek site's ground breaking in October 2016 where guests included Nizar Al-Adsani, CEO of KPC, and Mohammad Al-Farhoud, PIC CEO, as well as Raja Zeidan, EQUATE's Board Deputy Chair and other members of the EQUATE management team.

In addition to glycol, EQUATE is also a major producer of polyolefins in Kuwait and PET resin through its Equipolymers subsidiary in Schkopau, Germany. Equipolymers is run as a stand-alone company, Ramachandran noted. He said this specialized product shows how innovation adds value to the petrochemical industry.

"With the global shift from aluminum cans to juice and water bottles, there is strong demand for PET bottles," Ramachandran added. "There is an important role for PET in quality of life and public health. For example, there is a new 5-gallon PET water pail that outperforms the previous polycarbonate type."

## Reducing $CO_2$ emissions

Sustainability is one of EQUATE's areas of focus targeting a sustainable environment, economy and society. For example, its Kuwait site has made significant strides in reducing $CO_2$ emissions, according to Abeer Al-Omar, Senior Executive of Corporate Communications and Government Affairs.

"In 2017, we executed various projects resulting in a total reduction of 1.94% from 2016 baseline," she said. "This was done through implementing carbon capture projects and increasing operational efficiency. These types of initiatives align with EQUATE Sustainability Strategy, a strategy that is linked to the United Nations' 2030 Sustainable Development Goals and the 2035 Kuwait National Development Plan. Pravind Ramdial, North America Responsible Care leader, said similar emission reduction activities take place at the Canadian sites. In Prentiss, Alberta, EQUATE captured nearly 1.4 million tons of carbon dioxide from its site and at the Fort Saskatchewan facility, $CO_2$ is sent to a nearby customer production facility and further purified for use in industrial and commercial markets.


Shared commitment to safety and reliability within every person at every location

Ramdial emphasized that in addition to protecting the environment, EQUATE works tirelessly to keep people and communities safe.

"Safety is part of our DNA," he said. "It is not a program or a process or a one-off initiative. It is in everything we do every time, every day, by everyone so that everyone goes home safely. We are very clear on our priorities and nothing – cost, schedule and so on - competes with safety."

It takes a high-performing workforce to make a company like EQUATE operate so effectively in all aspects of its business. Globally, EQUATE employs about 1,500 people, mostly in operations, said Aldousari.

"We are keen to attract talent in multiple disciplines from all over the world. Our multiple locations and facilities reflect production and sales globally," he said.

The group has a new headquarters in Kuwait, and an integrated manufacturing complex with two steam crackers, EG, and PE production in Shuaiba. EQUATE also operates other plants in Kuwait on behalf of owners, including PP and an aromatics complex. The three Canadian glycol plants have a full contingent organization of support functions including supply chain, procurement, engineering and human resources. The office in Sugar Land, TX, south of Houston, was recently opened to support the construction of the world scale Oyster Creek glycol plant.

"There are also commercial offices in Dubai, Amsterdam, Singapore, Hong Kong, Beijing, and Shanghai," said Aldousari. "And integrated supply-chain operations globally."

He noted that there are many nationalities and cultures represented in

**EQUATE Group Executive Management Team**
Back row from left to right: Naser Aldousari, Senior Vice President–Dr. Ramesh Ramachandran, President & CEO - Dawood Al-Abduljalil, Chief Financial Officer–Tareq Al-Kandari, Vice President for Technical Services. Front row from left to right: Arnold Thomas, Vice President Operations, Nawaf Al-Khaledi–Vice President Elect Technical Services.

EQUATE, but they all have common goals.

### Many languages. One culture

"There are many languages spoken at our locations, but there is a shared commitment to safety and reliability within every person," he said. "We constantly remind ourselves that we have a common purpose and direct our energy toward business and corporate goals. Being a multinational organization helps us compete in the current business environment. EQUATE Group has been able to cultivate an agile culture that is able to adapt and advance. Integration is not just an important part of such a far-flung operation, it is a competitive advantage."

He underscores that close relationships with customers is a differentiator. "We understand their challenges and we look for ways to be part of their growth in their own markets. It is the same for our suppliers and service providers. Doing all that is not easy. It requires discipline and commitment."

### Active supply chain management

While many major global petrochemical companies sell the bulk of their commodities at the plant gate, EQUATE Group prefers to sell on a delivered basis, although it also sells fob at a customer's request. It has a large and efficient logistics group to manage that supply chain both in raw materials inbound from suppliers and finished materials outbound to customers.

EQUATE Group's two primary shipments are EG and thermoplastic polymers, mainly PE. However, they also manage the entire supply chain for other JV's products, mainly styrene monomer, paraxylene, and polypropylene.

For most of its distribution network, the EQUATE Group uses third-party logistics (3PLs) firms, as well as some lead logistics providers or 4PLs. Those handle most terrestrial shipments, by rail and road. For the maritime moves, EQUATE relies upon the major commercial parcel-tanker lines.

Handling its own logistics both inbound and outbound gives EQUATE Group the ability to run its supply chain for maximum production. "In materials flow we prefer to push maximum production out through the supply chain," said Yousef Al-Gharabally, Global Integrated Supply Chain Director, "rather than the pull mode where demand is the main driver. "If a customer needs to rush or delay a shipment, we can work within our supply chain to accommodate that. We try never to impose changes on our customers, and usually we don't have to. They know they can come to us with adjustments, and we will work with them. We respect them; we understand their needs and their changing situations. If I was to sum it in one phrase it would be supply-chain resilience and customer intimacy."

### Looking to the future

Customer focus, global reach, advantaged feedstock, strong parent companies, product expertise and using the best practices in the industry are qualities that Ramachandran believes contribute to the global growth story of EQUATE, but he said it is only the beginning.

"Our board is very supportive of helping us grow but EQUATERs know that we have to earn the right to grow each year. We have many advantages to enable that growth. We can cherry pick the best practices of our reputable parents. We will always be focused on a narrow range of products and invest in making sure that the best technologies are practiced at all sites. With our global footprint and a diverse workforce, we present customers and suppliers with the ability to work with us seamlessly. It is this low overhead, operational excellence and customer intimacy model that allows us to navigate the troughs without major disruptions. EQUATERs have surely delivered when challenged and with the support of the parents will continue to expand profitably," he said. ■