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LATIN AMERICA

PETROCHEMICALS AND CHEMICALS

2018

Braskem Idesa Strengthening Mexico's Petrochemical Industry.

- ▶ Over **two million tons** of Polyethylene marketed since the beginning of operations in 2016.
- ▶ Supply of **high-quality** resins to plastic transforming companies throughout Mexico and in more than **43 countries** where we export our product.
- ▶ Our **Made-in-Mexico Polyethylene** has a positive impact on the country's trade balance, replacing over **30%** of imports to Mexico.
- ▶ Our commitment: a strategic focus on the **development of Mexico's petrochemical industry**.



Braskem Idesa 

Dear Reader,

The last few years have seen a drastic transformation of the dynamics in Latin America's petrochemical and chemical industries. Probably the most important change has been the shale gas revolution in the United States and the subsequent investment wave that followed, which is already generating sizeable flows of product toward Latin American markets.

While regional demand is expected to remain solid, as urbanization keeps pace and more people join the ranks of the middle classes, Latin America's petrochemical industry has not been able to develop accordingly due to a variety of factors including political and economic instability, the volatility of oil and gas prices, and infrastructure bottlenecks.

Those who see the glass half empty could argue that the region's industry has lost too much ground in relation to producers from the US and other regions. In Mexico, for instance, earlier this year Pemex imported ethane for the first time in its history, and this is expected to continue in the immediate future. Meanwhile, and according to data from Abiquim, Brazil's chemical trade deficit has dramatically expanded over the last quarter of a century, and amounts today to \$US23.2 billion, versus US\$1.5 billion in 1991.

Optimists, however, already see signs of recovery in the region's largest economies. Etileno XXI can be seen as a turning point for Mexico, and industry leaders hope the energy reform will be maintained by the new Mexican administration –this should bear fruit in the coming years and offset Pemex' declining oil and gas production. Meanwhile, Brazil has made huge progress in pre-salt hydrocarbon development thanks to technological advances and, despite its current economic turmoil, Argentina offers a bright future with the massive unconventional oil and gas resources of the Vaca Muerta formation.

In this exciting context, with its share of opportunity and challenge, we are glad to present the *Latin America Petrochemicals and Chemicals 2018* executive guide, a publication that intends to provide a snapshot of the main issues affecting the industry.

In the third year of collaboration between Global Business Reports (GBR) and APLA, and after the reports on Argentina in 2016 and Brazil in 2017, this year the guide includes a special country focus on Mexico, for release at the 38th Latin American Petrochemical Annual Meeting in Cancún.

With insights from key players across the whole value chain, from petrochemicals producers and specialty players to distribution and logistics companies, the publication provides an overview of issues such as feedstock availability, infrastructure development, free-trade agreement negotiations, safety and sustainability.

We want to thank all companies and institutions that participated in the research process, and we hope you enjoy the report.



Alice Pascoletti,
General Manager
Global Business Reports



Manuel Díaz,
Executive Director
APLA

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LATIN AMERICA PETROCHEMICALS AND CHEMICALS 2018
COUNTRY FOCUS: MEXICO
Industry Explorations
Global Business Reports & APLA

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Latin America Overview

"Importing feedstock, just because of the shipping cost, puts the importing region at a disadvantage. Also, infrastructure challenges in countries like Brazil and Argentina make the Asian markets more accessible for exporters from the US. Longer term, more locally available feedstock would be the key for future growth and competitiveness in Latin America."

- Bob Patel,
CEO,
LyondellBasell

Latin American Petrochemicals: Decision Making Time

The region has resources and a growing demand, but faces political and infrastructure challenges

The last few years have proven to be a period of difficulty for Latin American economies. First, the region had to deal with the end of the commodity super-cycle, a downturn that wreaked havoc in many commodity-dependent countries globally. More recently, other events have contributed to maintain a scenario of uncertainty, such as US president Donald Trump's unpredictable moves in foreign trade, the election in Mexico that is seeing López Obrador being sworn in as new president, the polls in Brazil, the region's largest economy, and the political and economic volatility of Argentina, among others. For the petrochemicals and chemicals industry, whose performance is strongly linked to sustained economic growth and that, particularly in Latin America, is deeply affected by political swings, all this has not been easy to swallow. Ignacio Torras, president of Tricon, a global player in petrochemical trading and distribution, elaborated on this: "There are major threats that make the liability management a delicate challenge; the economic crisis in Argentina, the major changes in political direction in Brazil and Mexico, and the further collapse of Venezuela, are all creating an unstable market which we need to handle on a day to day basis."

The economic backdrop and the intertwining depressed oil prices have been consequential for Latin America's petrochemical industries. The recession was so deep in Brazil that there was not enough domestic demand for its polyethylene production. The oil price had lost over 70% of its value from its June 2014 level, until it started to rise again in January 2016. Not only did this hit oil and gas producing countries in the region, it also meant there was less incentive to invest in their petrochemical industries, which in turn has resulted in a dearth of new projects. In parallel to this, the shale gas revolution in the United States has had a far-reaching effect on product flows in the region. While Latin America has significant reserves upstream, over the last years the region has not created the right conditions to exploit them, and, with the noteworthy exception of Etileño XXI by Braskem Idesa in Mexico, there have not been major investments in petrochemical plants, while the US is seeing a boom of new projects across its value chain.

"Today, the advantage of the U.S. through its feedstock availability is clear, and it is not going to be easy to compete to attract new investment projects. The current investment wave, that will take us through

2020, is creating a new offer of ethylene and derivatives – we are seeing important product flows reaching Mexico, and soon they will reach other Latin American markets," said José Luis Uriegas, past president of APLA and CEO of Grupo Idesa. Perhaps an illustrative example of this dynamic is Pemex' first ever import of ethane, which took place in February, in a relationship that has now become a three-year contract with US supplier Vitol for up to 288,000 tonnes per year. While this is the result of Pemex' declining production profile, the access to competitive feedstock from the US may actually offer an interesting opportunity to promote investment, considering Latin America offers a large and growing market for all sorts of products.

"North America will become one of the largest players in the global ethylene derivatives, mainly polyethylene and glycols. The Latin America polyethylene industry, which is net short, should benefit by having access to a more competitive resin. More importantly, converters and processors in Latin America should see this as an opportunity to grow and expand their business, thinking more globally," affirmed Torras of Tricon.

Rina Quijada, vice president Latin America at IHS Markit, said: "The entire region has gone through difficult times in the last ten years from Mexico down to Patagonia, yet the next few years will present a better business environment for investors." Leaving aside the political aspects, Quijada believes the fundamentals are there for a sustained growth period of the industry: "Latin America has great potential for the industry because it has raw material, it has technology and there is strong demand in the market. Brazil's pre-salt reserves and Vaca Muerta in Argentina are a reality and will continue to provide additional feedstock in the near future."

Logistics woes

On top of providing more predictability from a political standpoint, Latin America needs to get its act together when it comes to infrastructure development, otherwise all the potential of its growing market is

offset by its lack of logistics efficiency. This results in less profitable and less competitive businesses – an issue that has been an ongoing theme in APLA's Logistic Meetings, whose 20th edition took place in Santiago in May 2018.

Fernando Reinecke, president of the 2018 Logistic Meeting and regional logistics and customer service manager at Methanex Corporation in Chile, affirmed that Latin America is one of the most inefficient regions due to the infrastructure deficit and the congestion at the terminals, and pointed to Brazil and Argentina as two countries with serious problems: "These issues affect smaller markets such as Chile, Peru, or Colombia, because the ship-owners have to pass through the main ports, having to face congestion," he said. Ignacio Torras of Tricon, who handles enormous volumes globally on a daily basis, argued that Latin America continues to suffer from poor and outdated infrastructure. "Importing and exporting from the region, whether it is bulk or containerized cargo, remains a challenge when compared to other regions in the world. Operational costs in the region remain high, draft is limited, not allowing bigger and more efficient vessels to call at these ports, internal transportation is mainly done by trucks, while river-ways and railways are underdeveloped and underutilized," he said. The poor state of much of the region's infrastructure is actually the consequence of political instability, as infrastructure development requires long-term planning that goes beyond the political mandates of each particular moment. Meanwhile, the Lava Jato corruption scandal, with tentacles all across the region, has further delayed infrastructure development.

"For years we have heard talk of projects and plans for public-private partnerships to build new facilities in Brazil, but there is a problem with the bureaucracy involved. The role of the government, beyond controlling trade, should actually be facilitating trade, but in some countries that is not the case. This way, we see that lots of product enter Mercosur through Uruguay, because Argentinean or Brazilian ports are less efficient," said Eduardo Praselj, president of the Logistics Association of Venezuela (ALV). ■



Image courtesy of YPF



José Luis Uriegas

Past President
APLA

What is the current state of Latin America's petrochemicals industry?

The first factor affecting any region's competitiveness is the availability of feedstock, which varies from country to country. Mexico has oil and gas resources, but the investment in upstream has been insufficient over the last years. The country has limited availability of ethane so additional investment is required, with a good combination of private and public investment. In the petrochemicals industry, Mexico had the largest investment with the US\$5 billion plus Etileno XXI project, which was a key milestone, with a cracker already producing more than 1 million tonnes of ethane, ethylene and its derivatives, mainly polyethylene.

The other main factor is access to markets. In the case of Mexico, its local market is very big and its large industrial base requires a lot of product, but also Mexico has many free-trade agreements in place. NAFTA is under renegotiation, but we believe that the outcome of this will be positive, and also Mexico has agreements with the European Union, Japan and other jurisdictions.

Like Mexico, Brazil also has feedstock availability. Ethane is not abundant there, however the country has a lot of naphta – this is more costly but Brazil has the capacity to develop its industry nevertheless. Brazil has the region's largest installed petrochemical capacity, and it has a great advantage in terms of access to markets, being itself the largest market in Latin America and having preferential access to neighboring countries like Argentina and others.

Argentina is also in a great position because of its discoveries of shale resources, and this should translate into feedstock availability over the next few years. The Argentinean market is smaller than those of Mexico or Brazil, but as long as it achieves low production costs, it will have the ability to export its product to other countries. Finally, although smaller, Colombia has a decent petrochemical industry. So far it has focused on feeding its local market, but over the long term it could also become an important regional player.

How long will the U.S. continue to have a competitive advantage?

Today, the advantage of the U.S. through its feedstock availability is clear, and this is going to continue in the short and medium terms. It is not going to be easy to compete to attract new investment projects. All the projects of the current investment wave, that will take us through 2020, are creating a new offer of ethylene and derivatives. Much of that will be absorbed by the American market, which is very dynamic at the moment, but we are seeing important product flows reaching Mexico, and soon they will reach other Latin American markets.

Beyond Etileno XXI in Mexico, which other countries could host new investment projects?

Argentina offers a great opportunity, but all will depend on the country's ability to stabilize its economy and currency. Once there is less volatility, it will be easier to make the case for new investments in Argentina. The shale resources in Argentina are as competitive as the ones in the U.S., although of course the U.S. already has all the relevant infrastructure, and Argentina needs to build it.

In Brazil, the country already has important capacity and I do not see new investments coming up, whereas in Mexico I do not think we will see greenfield projects for new crackers due to the lack of significant extra feedstock, but we should at least see expansions in the existing crackers.

Plastic has come under the spotlight for environmental reasons. What is the industry doing to improve sustainability levels?

Plastic products, even if they offer great features that allow for the quality of life we have today, have been targeted on environmental grounds. The whole industry in the region and APLA are focused on how we improve the life cycle of the different products, how we reduce our carbon footprint, and how we maximize recycling, among other steps. Moreover, as an industry we have not been able to communicate how important our industry is for our day-to-day lives, so we need to work on communication and image improving initiatives. ■

The current investment wave in the US is creating a new offer of ethylene and derivatives. Much of that will be absorbed by the American market, which is very dynamic at the moment, but we are seeing important product flows reaching Mexico, and soon they will reach other Latin American markets.



Bob Patel

CEO
LYONDELLBASELL

What is LyondellBasell's footprint in the Americas?

We have a very significant US division in olefins and polyolefins, including polypropylene. We have several steam crackers in the Gulf coast, and two Midwest crackers for a total ethylene capacity of more than 12 billion pounds. We also have a very large polyethylene position and quite a bit of that is high density polyethylene. Going further south, we have the Indelpro joint venture in Mexico, and we have polypropylene compounding capacity in Mexico, Brazil and Argentina.

In 2013 through 2015, our growth was focused on debottlenecking of existing capacity of mainly ethylene at La Porte, Corpus Christi and Channelview. Now, we are building new polyethylene capacity to match those ethylene expansions. Our first new polyethylene plant is under construction and we aim to start production in 2019. It has our new Hyperzone technology for the production of differentiated high density polyethylenes. Additionally, we are building the world's largest propylene oxide and tertiary butyl alcohol plant on the US Gulf Coast. This is a US\$2.4 billion project and is the largest single capital investment in the history of our company.

How does the company see Latin America, especially with the potential deal to acquire Braskem?

We have a very strong position in North America, Europe and a reasonably good position in Asia, but in Latin America we do not have many assets in what we believe will be a very important market over time, with growing middle classes in countries like Brazil and Mexico. That is part of the rationale for us considering the acquisition of Braskem. The potential combination of LyondellBasell's and Braskem's complementary strengths, product portfolios and operational footprints would create significant value for our shareholders, customers and employees.

Latin America is absorbing petrochemical products from the US. Do you think the region will catch up with local capacity?

Importing feedstock, just because of the shipping cost, puts the importing region at a disadvantage. Also, infrastructure challenges in countries like Brazil and Argentina make the Asian markets more accessible

for exporters from the US. Longer term, more locally available feedstock would be the key for future growth and competitiveness in Latin America. I am starting to see very good potential – for example, the development of the pre-salt oil fields in Brazil and the shale gas in Argentina.

How do you read the trade negotiations by the US administration?

We support the modernization of NAFTA, but NAFTA itself is a very critical agreement to take advantage of the strengths that the US, Mexico and Canada have. Tariffs between the countries increase cost burdens and this could discourage continued investment in the US. Tariffs also weaken the shale gas advantage, which has allowed the country to build new plants and create more employment. As a company, tariffs make us rethink how much we should build in terms of export-oriented capacity.

What is LyondellBasell's approach toward sustainability?

Plastics, in themselves, are a great sustainability story in terms of how they enable everyday life. With polyethylene, our innovative pipe resins help deliver clean, fresh water to many parts of the world, and also gas – we are one of the industry leaders in the high density pipe market. Moreover, in food packaging, one of the great sustainability stories about plastics is that they keep food fresh for longer, and you can package it in a size that is accessible to the wider population. Finally, our polypropylene business, especially the compounding business, is geared towards automotive, where we replace higher weight materials. Lighter weight ultimately improves fuel efficiency and reduces carbon emissions. What we have to solve, especially in packaging, is what happens to the plastics after they are consumed. At LyondellBasell we have created a circular economy joint venture with SUEZ in Europe called QCP, which stands for Quality Circular Polymers. Also, we have forged a partnership with the Karlsruhe Institute of Technology to do innovation around molecular recycling. We are trying to create technology to unzip the plastic pack to its source as a chemical feedstock to produce new polyethylene. This is a bit more longer term, but it could be a great solution for a more sustainable circular economy around plastics. ■

Tariffs between the countries increase cost burdens and weaken the shale gas advantage, and this could discourage investment in the US. As a company, tariffs make us rethink how much we should build in terms of export-oriented capacity.



Rina Quijada

Vice President Latin America
IHS MARKIT

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The pre-salt development is already yielding some 2 million bpd. This, coupled with the possibility of having sustained economic growth, provides a promising picture for Brazil. However, as in Mexico and Argentina, the political environment will be critical.

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What is the current situation of the region's petrochemicals industry?

In the United States, the resurgence of shale gas for the petrochemicals industry over the last decade has been providing an abundant and competitive source of feedstock for the industry. Before the shale boom, we needed an oil price of US\$80 per barrel for oil to be attractive, today US\$35 per barrel is enough. However, when looking from Mexico to Patagonia, there are resources but there is a need for investment, and in Latin America the political factor is key. Countries like Colombia, Chile and Peru have a favorable political and economic framework to support new investment, but market size is not as large as Mercosur. We should also consider that building a new petrochemical site could take four to seven years from the time that a decision is made to completion.

What is your view of the election results in Colombia and Mexico?

In Colombia, the results of the recent election will have a favorable impact on the industry, and we should also see an increase of Ecopetrol's E&P activity. On the demand side, as long as there is economic growth, there will be demand growth for petrochemical products.

In Mexico, over the last years, we have seen petrochemical plant closures due to feedstock scarcity in Pajaritos, Cangrejera and Morelos. Cantarell, Mexico's greatest oil producing field, has been declining for some time, and gas production has also decreased as it is associated to oil production. Today, most Pemex refineries are operating at less than 50% of installed capacity. With regard to petrochemicals, the three large production sites have also been working at significantly low operating rates. In order to alleviate the feedstock situation at these sites, in February 2018 Pemex imported ethane for the very first time. It adapted the Pajaritos terminal for this, and recently signed a three-year contract with Vitol for the supply of ethane from the US Gulf Coast. In Mexico all ethylene is produced by cracking ethane.

There is uncertainty about López Obrador's strategy with regard to the energy reform. What do you expect?

We still do not know where the new Administration will take Pemex to, but we

know that investment will only flow if there is political and economic stability. Pemex will need to work together with private investors to optimize existing facilities and expand others. There is a need for foreign capital to improve the current facilities, so both refineries and petrochemical plants can increase their operating rates. Meanwhile, we believe Mexico's proximity to the US feedstock could provide additional feedstock to improve its production while it develops more local feedstock in the future.

Brazil has come out of a deep recession. What do you expect of its industry?

Braskem has emerged as the main petrochemical player after 20 years of consolidation. The petrochemical industry is now more integrated, efficient and global. Over the next years, we expect to see the industry further strengthen and become even more linked to global trade flows, with different players involved. Regarding feedstock availability, the pre-salt development is already yielding some 2 million barrels of oil per day. This, coupled with the possibility of having sustained economic growth, provides a promising picture for Brazil. However, as in Mexico and Argentina, the political environment will be critical.

Argentina has had a turbulent political year. Is this delaying the development of Vaca Muerta?

Argentina's great challenge is on the political side. We knew that the Macri government was going to face tough decisions, and next year there are presidential elections again. Having said that, Vaca Muerta is already a reality. The country should be in a position to export gas to Chile again, allowing for the reactivation of methanol plants in that country. Midstream investments are also gearing up for additional supply of gas. We believe infrastructure is currently being built to handle additional supply.

Overall, Latin America shows great potential for the petrochemical industry. We believe that Brazil's pre-salt reserves and Vaca Muerta in Argentina are a reality and will continue to provide additional feedstock in the near future. Important changes are taking place and we anticipate Latin America to be a strategic region in the global petrochemical industry. ■



Ignacio Torras

President
TRICON

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In regard to polymers, we continue to see strong growth in Latin America fueled by an expanding middle class. The region will remain net short on polyethylene and other plastics products due to the lack of competitive feedstock, so imports will continue to play a mayor role.

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Could you provide a quick overview of Tricon's evolution?

We initiated operations in 1996, focusing on caustic soda for the Latin America market. What followed was a series of strategic expansions both in product range and geographies that transformed Tricon into one of the largest petrochemical trading and distribution companies in the world. In 2006, we entered the polymer business, which has grown to 1.5 million tonnes per year. In 2008, we opened our back office operation in India to support global growth and later, we started our Tricon Academia and Tricon Cares initiatives to train future leaders in the organization and give back to the communities in need. On our 20th anniversary, we incorporated Lighthouse, an independent chartering company that provides freight solutions to the chemical and petroleum industries. Today, we have five main business lines: Liquid Chemicals, Plastics, Dry Bulk, Liquid Fuels, and Fertilizers & Raw Materials.

What have been the main changes in global chemical product flows in the last years?

One of the most important developments is the shale gas revolution in North America. The access to cheap gas is prompting very large investment in ethylene and ethylene derivatives, specially polyethylene. This way, North America will become one of the largest players in the global ethylene derivatives, mainly polyethylene and glycols. Latin America, because of its proximity, is a natural market for the polyethylene producers. The Latin America polyethylene industry, which is net short, should benefit by having access to a more competitive resin. More importantly, converters and processors in Latin America should see this as an opportunity to grow and expand their business, thinking more globally.

What are the most noteworthy developments related to Latin America?

In regard to polymers, we continue to see strong growth in the region fueled by an expanding middle class. The region will remain net short on polyethylene and other plastics products due to the lack of competitive feedstock, so imports will continue to play a mayor role. Beyond demand, there are major threats that make the li-

ability management a delicate challenge; the economic crisis in Argentina, the major changes in political direction in Brazil and Mexico, and the further collapse of Venezuela, are all creating an unstable market which we need to handle on a day to day basis.

How do changing fuel costs and consolidation in the shipping industry affect Tricon's business?

The uncertainties around the implementation of MARPOL 2020 fuels and its limited supply, in combination with the 2019 water ballast treatment plants required for vessels, will have an impact. The inability of most charterers to secure freight contracts after 2020 will influence the overall freight rates as well as the market dynamics, with freight markets going from established contract freights to spot deals. I see this as an opportunity for Tricon to establish itself as an even more important preferred charterer by taking advantage of Tricon's combined volumes and well-coordinated logistic and shipping approach spearheaded by our newest venture, Lighthouse Chartering.

What are the prospects for Tricon and the industry in general?

The last couple of years have been a period of high volatility where risk has increased, leading to an unprecedented level of consolidation, M&A and restructuring among traditional chemical players. We believe that times like this are when we need to invest in our business, our people, and prepare for the future. In the recent months we have made several strategic acquisitions in different business lines and we continue to explore and evaluate opportunities to grow. On another note, in recent years, we have seen all over the media a significant amount of information regarding contamination of our rivers and oceans by plastic residues. While it is our responsibility to make it visible how the chemical industry impacts our world in a positive way, it is also our duty to tackle the issues and provide long-term, sustainable solutions to the contamination problem caused by chemicals and plastics. The industry should work together with local governments, communities, manufacturers, consumers and all stakeholders to propose, develop and implement long-term, sustainable solutions. ■

Brazil

The region's largest economy is still awaiting recovery

Between 2011 and 2017, Brazil's GDP lost 21% of its value in US dollar terms, even if last year saw some mild signs of recovery after two years of deep recession. Last year GDP grew by 1% and, in 2018, the Brazilian government's forecast is of a still disappointing 1.6% (by contrast, GDP contracted by 3.5% in 2015 and a further 3.6% in 2016, according to data from the International Monetary Fund).

Brazil is still Latin America's largest economy, with a population of 207 million people and outstanding potential if it can unlock healthy growth rates again. "I do not see economic recovery yet," says Fernando Figueiredo, CEO of the Brazilian Chemical Industry Association (Abiquim). "To grow by just 1% is a failure for a country that has the potential to grow between 3% and 5% annually."

According to Abiquim figures, the chemical industry has 21% idle capacity and 38% of the demand for chemical products in the country is met by imports. Indeed, the chemical industry trade deficit has grown from US\$1.5 billion in 1991 to US\$23.2 billion in 2017. Among the root causes that are preventing further investment on Brazilian soil, Figueiredo mentions high feedstock costs, high energy prices, infrastructure bottlenecks, and high interest rates. "Improving the cost of



Image courtesy of Rhodia (Solvay Group)

energy or feedstock alone will not attract new investors if interest rates continue to be high," he insists.

While the country is struggling to leave the effects of recession behind, increased oil prices and the use of technology are aligning to reap the potential of upstream hydrocarbon development at the country's pre-salt reserves. The improvement in the feedstock situation, however, will not herald new sizeable petrochemical capacity soon. "Expansions and unconventional raw material supply are expected to increase in Mercosur, but it is unlikely there will be a greenfield facility of over one million tonnes of ethylene and derivatives in Brazil or Argentina by 2022," says Rina Quijada, vice president Latin America at IHS Markit.

"The expectation is that Brazil can produce around 5 million barrels of oil per

day by 2030, and be self-sufficient in gas as soon as 2022," says Figueiredo. "The issue," he argues, "is to find a way to use this oil and gas to develop the industry in Brazil, generating added value and jobs." Adding to the uncertainty of economic and industrial recovery is the 2018 presidential election to choose the country's 38th president. Many hope that, regardless of the political profile of the winner, the new head of state will work together with the industry to promote growth and value creation. Figueiredo concludes: "All around South America we have political experience working with all sorts of governments, from far left to far right. At the end of the day, the governments want to create jobs and need to work with the industry. Also, in Brazil, Congress is increasingly powerful and it is controlled by the political center." ■



Fernando Figueiredo

CEO
ABIQUIM

The expectation is that Brazil can produce 5 million barrels of oil per day, tripling current capacity by 2030. Also, analysts predict that Brazil will be self-sufficient in gas as soon as 2022.

Could you give us a snapshot of Brazil's chemical industry and the challenges it faces?

The chemical industry in Brazil represents 10% of the country's industrial GDP and is the third most important sector. In 2016, Brazil's chemical industry was the sixth largest worldwide, but in 2017, we lost two positions and we are now the eighth largest. Imports have been increasing sharply over the last years and they now meet around 38% of the demand for chemicals in the country. Our industry has a 21% idle capacity. Among the issues we face, the first one is raw material costs. The naphtha price in Brazil is one of the highest in the world, and the gas price is three or four times higher than international prices. Secondly, we have very high energy costs. Third, logistics costs are 7% higher in Brazil than in competing countries abroad. Finally, there are other general issues such as high taxes.

What are the potential solutions to these issues?

One of Abiquim's suggestions was to reserve a portion of the oil and gas resources from pre-salt to promote the development of the refining and chemical industries. This has already been approved by the government. The problem of high energy costs, however, is not easy to solve. Brazil has a very green, but expensive, energy matrix. Finally, with regard to logistics, earlier this year we carried out a study from Bahia to Rio Grande du Sul (covering the area of the three large petrochemical poles in Bahia, Sao Paulo and Camaçari). Through that study, we made around 70 recommendations on how to improve logistics for the petrochemicals industry through 2035, for instance with an increased use of highways and cabotage. Also, recently the Ministry of Development approved our suggestion to create of a working group on the chemical industry.

How are you shaping up the chemical industry agenda for the new administration?

With the support of Deloitte, we sent a study to five presidential candidates, containing six main themes (raw material, logistics, energy, innovation/Chemistry 4.0, foreign trade and regulation) and 73 recommendations. All around South America we have a lot of political experience working with all sorts of governments, from far left to far right. At the end of the day, the governments want to create jobs and need to work with the industry.

Analysts are optimistic about Brazil's E&P future in hydrocarbons. How do you read the development of the pre-salt resources?

The pre-salt development did not move for a while due to low oil prices, but now we see a lot of action from the government through auctions. The expectation is that Brazil can produce around 5 million barrels per day, tripling current capacity by 2030. Also, analysts predict that Brazil will be self-sufficient in gas as soon as 2022, so we would not have to worry any more about supplies from Bolivia. The prospects are very good from an oil and gas production perspective – the issue is to find a way to use this to develop the industry in Brazil, generating added value and jobs.

Has Brazil set the foundations for faster economic growth?

People say that Brazil is recovering but I do not see that. To grow by just 1% is a failure for a country that has the potential to grow between 3% and 5% annually. The Temer administration did some very good things, like the labor reform, but failed to pass a social security reform. Then, interest rates in Brazil continue to be high. For an industry that is highly capital intensive, to have high interest rates, combined with all the other problems we have discussed (high feedstock, energy and logistics costs), is a deterrent to new investment.

Finally, what can the industry do to tackle the issue of plastic pollution?

Today, any company who wants to be member of Abiquim needs to fulfill the requirements of the Responsible Care program. For many years as well, we have been working with Plastivida, an institution that works on the environmental and social aspects of plastics. They are implementing education programs in schools. Overall, we believe the most important issue to address in this subject is education. Well educated people will not cause ocean pollution. ■



BRAZIL AT A GLANCE

Source: IMF, data for 2017

Capital city: Brasilia
GDP: US\$ 2,054.97 billion
GDP growth: 0.97%
Total investment (% of GDP): 15.4%
Gross national savings (% of GDP): 15%
Current account balance (% of GDP): -0.47%

DEMOGRAPHIC DATA

Source: IMF, data for 2017

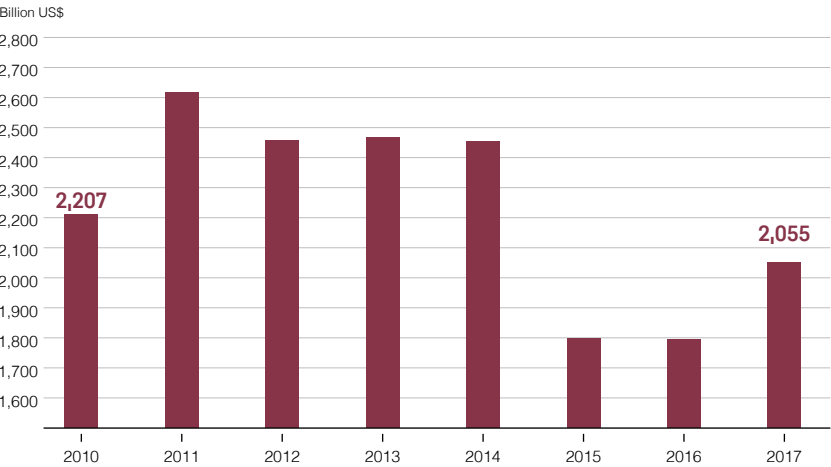
POPULATION
207.7 MILLION

UNEMPLOYMENT RATE
12.7%



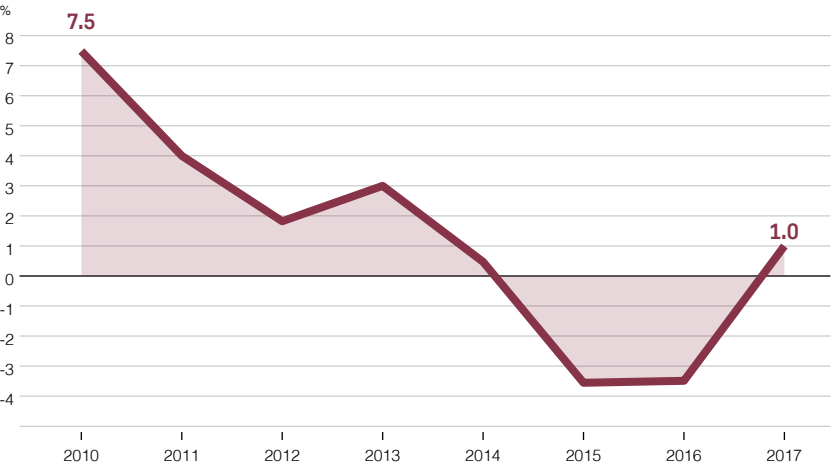
GDP EVOLUTION IN US DOLLAR VALUE

Source: IMF



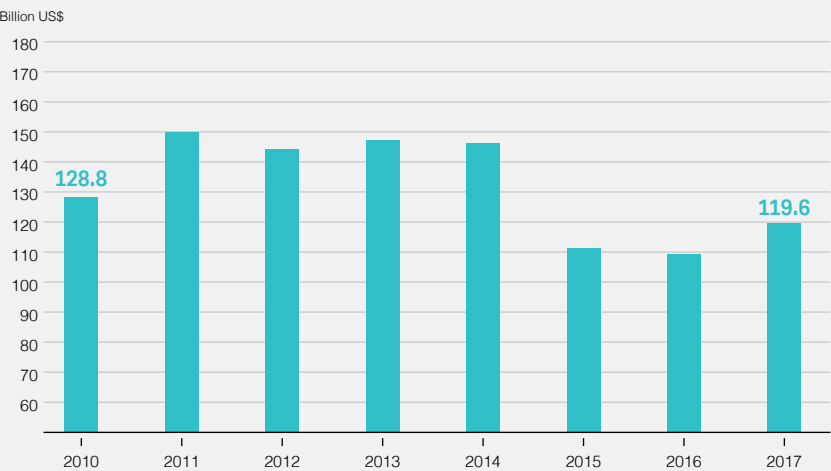
GDP GROWTH

Source: IMF



CHEMICAL INDUSTRY NET SALES IN US\$ VALUE

Source: ABIQUIM and other industry associations

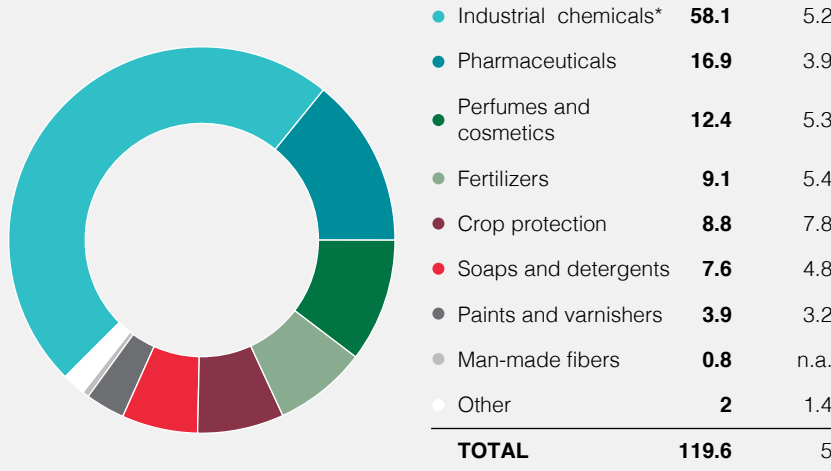


MAJOR PETROCHEMICAL COMPLEXES



CHEMICAL INDUSTRY SALES BREAKDOWN (2017)

Source: ABIQUIM and other industry associations



*Petrochemicals represent 65% of total industrial chemical sales

8th largest
chemical industry in the world

representing
2.4%
of Brazil's GDP and
10.8%
of industrial GDP

2 million jobs

Argentina

Vaca Muerta is already bearing fruit, but the country needs macroeconomic stability

11 years ago, Argentina realized it did not have enough gas to supply its internal market. As a result, the Nestor Kirchner administration cut gas exports to Chile and, in 2008, the country decided to bring a floating storage regasification unit (FSRU) to Bahía Blanca to assure that local demand for gas during the peak winter months was met.

A decade later, thanks to a sustained increase in gas production from Vaca Muerta, the services of this LNG FSRU will no longer be needed as of January 2019. While critics argue that the country's authorities should be more cautious about Argentina's capability to meet its internal demand, the truth is that, unlike Mexico, Argentina is already taking advantage of its shale potential. Argentine energy giant YPF is developing the largest oilfield from shale oil in the world and the largest shale gas field outside the United States, and the numbers speak for themselves: in gas, for instance, the share of unconventional natural gas production has grown from less than 10% in 2014 to more than 30% today. This process is expected to continue. According to Jorge de Zavaleta, executive director of the Argentine Chamber of the Chemical and Petrochemical Industry (CIQYP), the expected investment in Vaca Muerta in 2018 is around US\$9.5 billion: "By 2021, natural gas production, including conventional and non conventional, will

reach 170 million cubic meters per day (mcm/d) and 230 mcm/d by 2023-2024, respectively. These volumes would be large enough to support the development of large petrochemical projects," he says. Using this feedstock, YPF is seeking to build a world-scale petrochemical plant in the Bahía Blanca complex to meet regional demand. While the availability of large natural gas volumes is important for this, so is having competitive production costs: "In terms of productivity, the results of horizontal wells with up to 40 fracs are already comparable to the first quartile wells that are located in the Permian and Eagle Ford formations in the United States," continues Zavaleta.

While the Argentine state through YPF will play a fundamental role in this development, the participation of private players across the value chain will also be required, but Argentina's recent period of economic turbulence is hurting its global

attractiveness as an investment destination.

Inflation and currency devaluation have generated a climate of instability – the value of the US dollar against the peso has doubled between January and October 2018. In June, the International Monetary Fund came to the rescue with a US\$50 billion package, but the terms of the deal were subsequently put under renegotiation. Also, the Macri administration reintroduced the controversial tax on exports in its efforts to meet the fiscal deficit targets.

In conclusion, Argentina has been blessed with a spectacular shale formation that is already transforming its hydrocarbon supply matrix, but it will only realize its full potential if the investment community sees clarity about the economic climate and the rules of the game. The next months will be very interesting to see which direction the industry is headed. ■



Image courtesy of YPF



Jorge de Zavaleta

Executive Director

ARGENTINE CHAMBER OF THE CHEMICAL AND PETROCHEMICAL INDUSTRY (CIQYP)

Investment in Vaca Muerta is growing, with US\$6 billion in 2017 and a forecast of US\$9.5 billion in 2018. There are five areas in production and 27 areas in development, and altogether they only represent 26% of Vaca Muerta's acreage.

What is the current state of Argentina's petrochemical industry?

Argentina has seen four investment waves: the first one took place after World War II and was focused on replacing imports. The second wave promoted the petrochemicals industry between 1958 and 1970. The third wave was based on the monetization of natural gas and refining products, with the creation of the Bahía Blanca and Ensenada petrochemical poles. Finally, the fourth wave consisted of the Bahía Blanca expansion, with global scale plants for the separation of natural gas liquids, urea, polyethylene and methanol. Today, the chemical and petrochemical industry value chain, including the downstream segment, reaches US\$25 billion. The sector employs 110,000 people and represents 12% of Argentina's industrial GDP. According to figures from 2017, the sector exports US\$3 billion and imports US\$6 billion, so the trade deficit is around US\$3 billion annually.

How is Vaca Muerta progressing, and when can it trigger new investments along the petrochemical value chain?

Vaca Muerta is already a reality. In terms of productivity, the results of horizontal wells with up to 40 fracs are already comparable to the first quartile wells that are located in the Permian and Eagle Ford formations in the United States. Investment is growing year after year, with US\$6 billion in 2017 and a forecast of US\$9.5 billion in 2018. There are five areas in production and 27 areas at the development stage, and altogether they only represent 26% of Vaca Muerta's acreage. Non-conventional gas already amounts to 32% of Argentina's gas production. According to the Ministry of Energy, by 2021 gas natural production, including conventional and non conventional, will reach 170 million cubic meters per day (mcm/d) and 230 mcm/d by 2023-2024, respectively. These volumes would be large enough to support the development of large petrochemical projects.

The US has built significant infrastructure around its shale resources. What would it take, in terms of infrastructure development, to continue developing Argentina's shale richness?

The development of non-conventional resources in Vaca Muerta requires important investment in the midstream segment. For instance, you need pipelines to transport the

gas from the different areas, plants to adjust the dew point, and a new large backbone pipeline to take the natural gas towards the center of Argentina. These projects would cost around US\$2 billion and US\$2.5 billion. With regard to the demand, the three largest markets for natural gas are the petrochemicals industry, the thermal power generation sector and the LNG export market.

How are Argentinean ports in terms of efficiency and costs? Is there enough storage capacity?

The ports operate reasonably well, although their costs are high if compared to the rest of the region, so there is a need to improve competitiveness, which could be achieved by handling larger inflow and outflow volumes. The storage capacity available is adequate. The potential petrochemical projects in Argentina thanks to Vaca Muerta will be based on natural gas and natural gas liquids. The potential urea and plastic resins plants will require ports with capacity to move containers and dry bulk. We do not expect an increase in volumes of liquid chemicals.

How do you read the political landscape in Argentina right now, and what is Argentina's attractiveness for investment in the chemical segment versus other countries in the region?

The government is implementing economic measures to eliminate the fiscal deficit and stabilize the economy, and that requires time. From our industry we consider that, like the government announced, the export taxes are a temporary measure for the period 2018-2019. From our point of view, to be able to export petrochemicals competitively we must have abundant and competitive feedstock, world scale plants and clear and predictable rules of the game, so export taxes should be eliminated within the time-frame defined by the government.

How do you see the future of Argentina's petrochemical industry?

The development of non-conventional gas from Vaca Muerta is a unique opportunity for Argentina to have its fifth wave of investment with world scale plants aiming at covering the domestic deficit of chemical products, but more importantly at exporting to the region, where demand will continue to grow. Vaca Muerta's competitiveness will be key in this process. ■



ARGENTINA AT A GLANCE

Source: IMF, data for 2017

Capital city: Buenos Aires**GDP:** US\$ 637.7 billion**GDP growth:** 2.9%**Head of State:** President Mauricio Macri**Total investment (% of GDP):** 19.1%**Gross national savings (% of GDP):** 14.2%**Current account balance (% of GDP):** -4.8%

DEMOGRAPHIC DATA

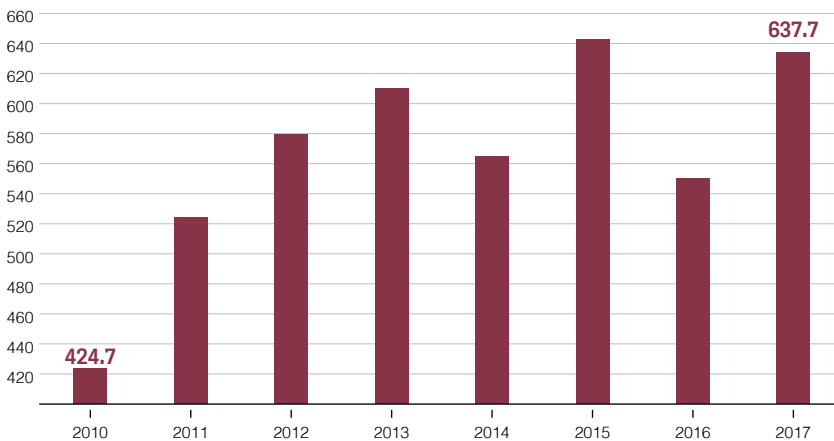
Source: IMF, data for 2017

POPULATION
44.1 MILLIONUNEMPLOYMENT RATE
8.3%

GDP EVOLUTION IN US DOLLAR VALUE

Source: IMF

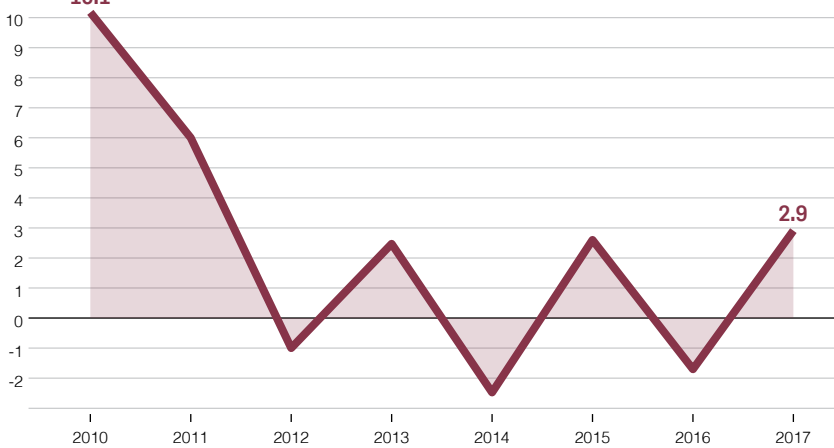
Billion US\$



GDP GROWTH

Source: IMF

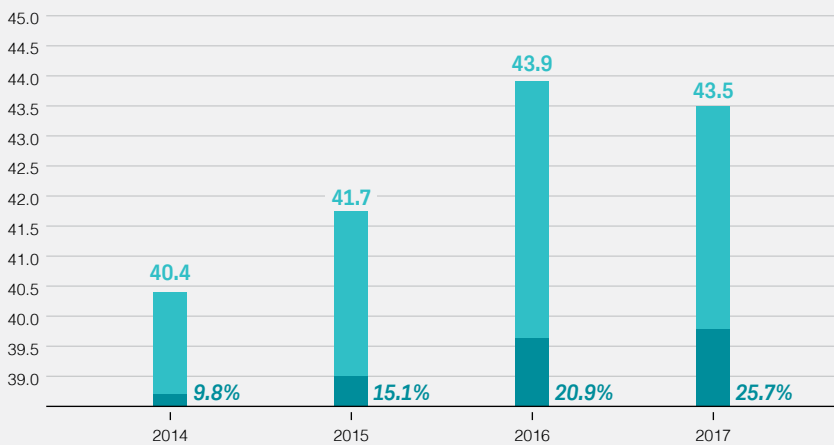
%



NATURAL GAS PRODUCTION

Source: IPA

Net production in million m3 Of which, unconventional (%)

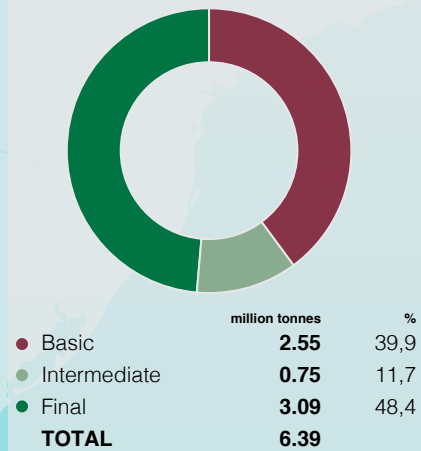
GDP per capita
US\$14,466GDP per capita (PPP)
US\$20,876Inflation rate
25.7%

MAJOR PETROCHEMICAL COMPLEXES



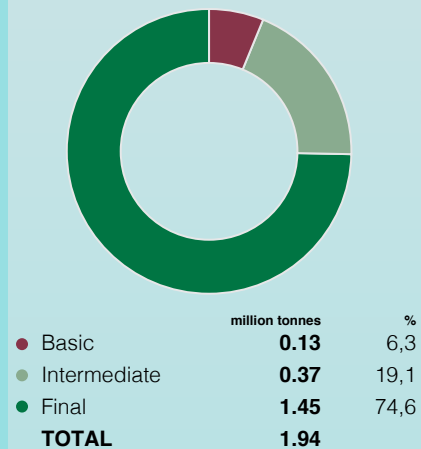
PETROCHEMICAL PRODUCTION (2017)

Source: IPA



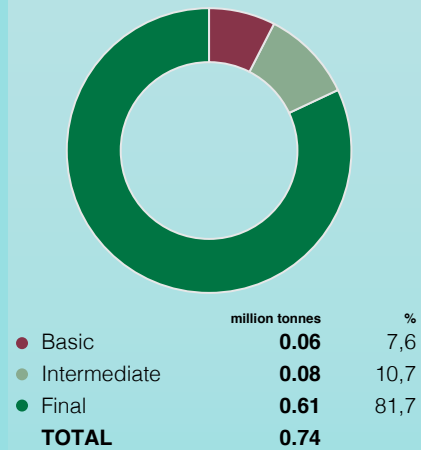
PETROCHEMICAL IMPORTS (2017)

Source: IPA



PETROCHEMICAL EXPORTS (2017)

Source: IPA



Colombia

Under new leadership, the country expects annual economic growth of at least 4%

Shortly after starting his presidential mandate, in August 2018 Iván Duque joined private sector leaders in Cartagena at a gathering of the National Association of Entrepreneurs (ANDI). The good vibe of the meeting resulted in a tacit agreement that both the public and the private sector should work together to improve economic growth rates, which have been

disappointing for the last couple of years. In 2017, GDP growth was just 1.8%, and the objective is to reach a 4% annual rate. Colombia is Latin America's fourth largest economy with a GDP worth US\$309.2 billion (IMF, 2017 data). GDP per capita in US dollar terms is not high at US\$6,273; it sits below Argentina, Brazil, Chile and even Peru, so there is great potential to continue promoting the expansion of the middle class in the country, and this in turn will push up demand for chemical and plastic products. "I think the results of the recent election will have a favorable impact on the industry, and we should also see an increase of Ecopetrol's E&P activity", affirmed Rina Quijada, vice president Latin America at IHS Markit. "On the demand side, as long as there is economic growth, there will be demand growth for petrochemical products. President Iván Duque will have to generate political and economic stability and this should support the development of the industry," she continued.

Indeed, Iván Duque's administration wants to simplify the tax framework to

make it easier for business owners and entrepreneurs to conduct activities within the formal economy. Optimism is already translating into higher levels of trade and investment, says Daniel Mitchell, president of industry association Acoplásticos: "2017 was not a great year as consumption growth was flat, but this year we have seen good recovery rates from the second quarter, and also Iván Duque's policies are aligned with an improvement of competitiveness. As a result, companies are investing to expand capacity across the value chain."

Mitchell provided some figures that illustrate how the Colombian market for petrochemical products still has great potential for growth: "In Colombia, we consume 28 kg of plastics per person per year – versus 35 kg in Brazil, 43 kg in Mexico, 45 kg in Argentina, 50 kg in Chile and 150 kg in the US."

With a population of 49.3 million, significant oil and gas resources and a market-friendly administration, Colombia will definitely be a market to watch in the immediate future. ■



Daniel Mitchell

President
ACOPLÁSTICOS

Colombia is a strong producer of polypropylene and PVC, but in other products there is a deficit. Colombia produces 66,000 mt/y of low density polyethylene, but the market consumes 440,000 mt/y of polyethylene in its different types.

What is the scope of Acoplásticos in Colombia?

Acoplásticos, created in 1961, is the association representing the chemical and petrochemical activity in plastics, paints and inks, fibers and rubber. We represent virtually 100% of the petrochemical industry in Colombia, which includes production of polypropylene, PVC, polystyrene, unsaturated polyester resins, and recycled PET, amounting to a combined capacity of 1.3 million tonnes per year (mt/y). The two main products are polypropylene and PVC. Then, in terms of the plastics converting industry, 56% of the segment consists of packaging, 20% is plastics for construction, 9% is plastics for agriculture, 7% is household products, and the remainder includes toys, auto parts, sports equipment, and others. We have three main lines of work: first, we represent the industry to improve competitiveness. Secondly, we look for new opportunities for our members. The third pillar is sustainability, environment, technology and innovation. In sustainability we work in two main aspects: the regulatory side, and public awareness. Finally, in technology and innovation, we have our Institute for Training and Research in Plastics and Rubber (ICIPC), that offers training and consultancy services.

Who are the main petrochemical players in Colombia?

Essentia (formerly Propilco) has installed capacity of 500,000 mt/y of polypropylene. Mexichem produces around 482,000 mt/y of PVC. Americas Styrenics (AmSty) and Ajovert Group have a combined capacity of 110,000 mt/y in polystyrene. Ecopetrol produces around 66,000 mt/y of low density polyethylene. In recycled PET the main players are Enka and Apropet, and the total capacity is around 60,000 mt/y. In unsaturated polystyrene resins a big player is Andercol – installed capacity for this material is around 60,000. Easily, 95% of the country's petrochemical capacity is located in Cartagena.

What is the availability of raw material for the plastics value chain?

Last year, hurricane Harvey affected global prices and it is unclear where the market is going. While demand in countries like the US and China is very strong, there are also important investments going on. In general, prices have been high and volatile over the

last year. This year we have seen a shortage of high density polyethylene in the market, while in other products the issue has been their high prices. Colombia is a strong producer of polypropylene and PVC, but in other products there is a deficit. Colombia produces 66,000 mt/y of low density polyethylene, but the market consumes 440,000 mt/y of polyethylene in its different types (LDPE, HDPE and LLDPE). We also import some PET.

What are the main issues affecting the industry's competitiveness?

Corporate taxes in Colombia are comparatively high. The government is going to present a reform to reduce taxation, so we expect this to improve. Another point is energy costs, which are also high. A third element is the labor regulation, which is rigid and creates extra costs to companies. Then, Colombia's topography is complex, so moving products around is a big challenge. There are large infrastructure investments going on, which should improve the situation. Finally, for the plastic converting industry, informality in the sector is an issue as well.

How solid are the economic growth prospects?

The prospects are good for the country. 2017 was not a great year as consumption growth was flat, but this year we have seen good recovery rates from the second quarter, and also Iván Duque's policies are aligned with an improvement of competitiveness. As a result, companies are investing to expand capacity across the value chain. Looking at local demand figures, we see great opportunity to grow: in Colombia, we consume 28 kg of plastics per person per year (versus 35 kg in Brazil, 43 kg in Mexico, 45 kg in Argentina, 50 kg in Chile and 150 kg in the US).

What are your areas of work to improve the sustainability of the industry?

We work in the different steps of the circular economy. For instance, from the design stage the products need to be recyclable and environmentally sustainable. Then, we need to raise awareness about the adequate separation and disposal of waste – that is where our *Dale vida al plástico* campaign fits in. Then, the authorities need to do selective collection of waste, and informal recyclers need to be organized to improve their activity. Finally, companies should recycle waste to create new products. ■



Image courtesy of Essentia



COLOMBIA AT A GLANCE

Source: IMF, data for 2017

Capital city: Bogotá
GDP: US\$309.2 billion
GDP growth: 1.8%
Head of State: President Iván Duque
Total investment (% of GDP): 23.4%
Gross national savings (% of GDP): 20%
Current account balance (% of GDP): -3.35%



DEMOGRAPHIC DATA

Source: IMF, data for 2017

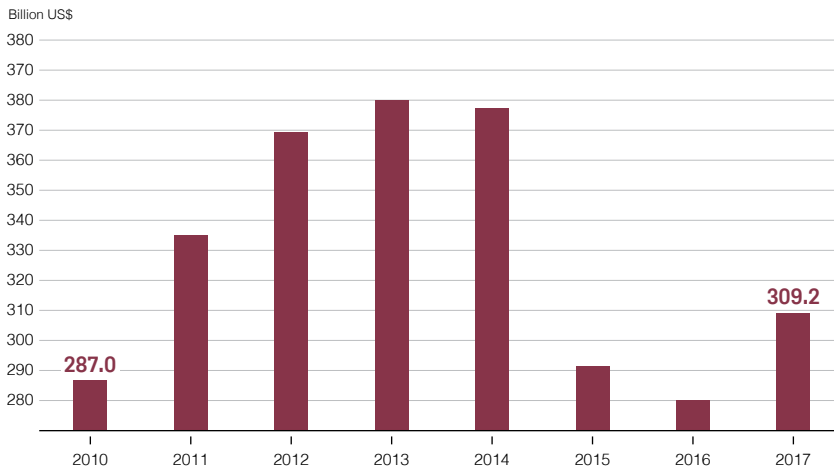
POPULATION
49.3 MILLION



UNEMPLOYMENT RATE
9.3%

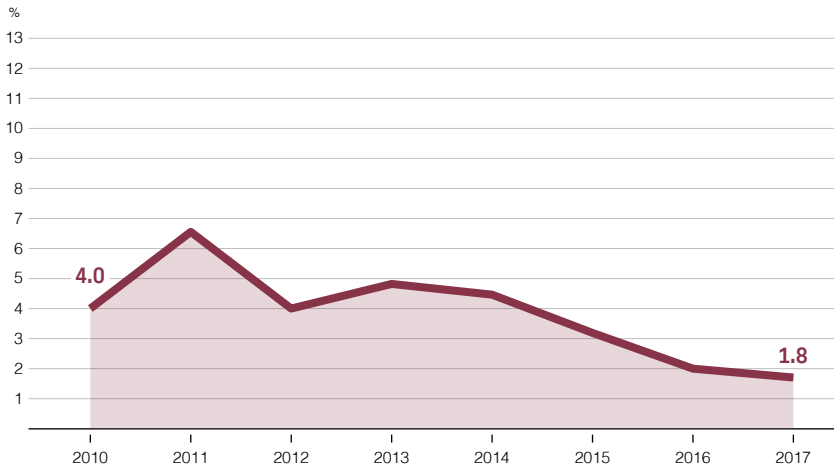
GDP EVOLUTION IN US DOLLAR VALUE

Source: IMF



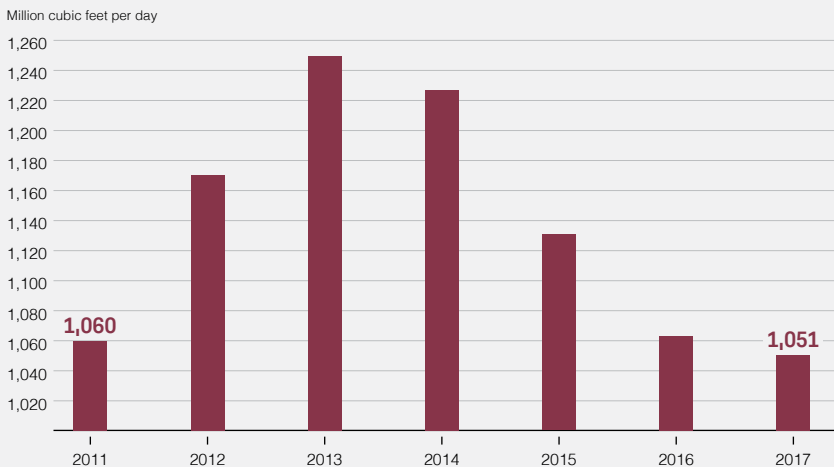
GDP GROWTH

Source: IMF



NATURAL GAS PRODUCTION

Sources: IEP-ACP / GBR

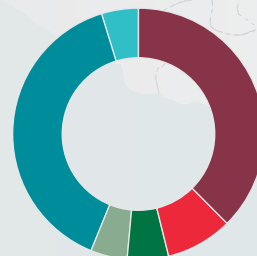


MAJOR PETROCHEMICAL COMPLEXES



INSTALLED PETROCHEMICAL CAPACITY

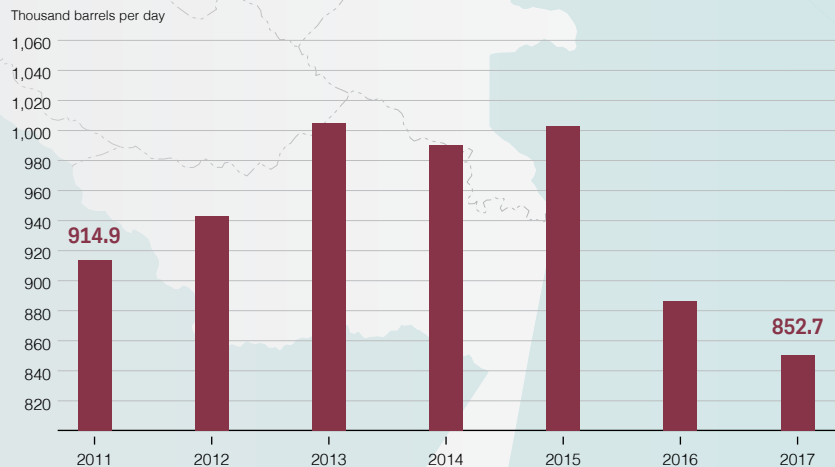
Source: Acoplásticos



- Polyvinyl chloride (PVC)
- Polystyrene
- Low density polyethylene
- Polyethylene terephthalate (PET)
- Polypropylene
- Unsaturated polystyrene resins

OIL PRODUCTION

Sources: IEP-ACP / GBR





CHILE AT A GLANCE

Source: IMF, data for 2017

Capital city: Santiago
GDP: US\$277 billion
GDP growth: 1.5%
Head of State: President Sebastián Piñera
Total investment (% of GDP): 22%
Gross national savings (% of GDP): 20.5%
Current account balance (% of GDP): -1.5%



DEMOGRAPHIC DATA

Source: IMF, data for 2017

POPULATION
18.4 MILLION

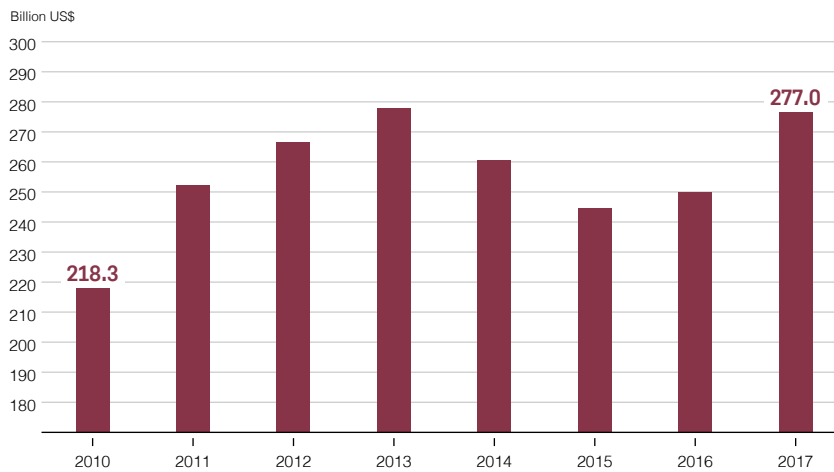
UNEMPLOYMENT RATE
6.7%



CHILE

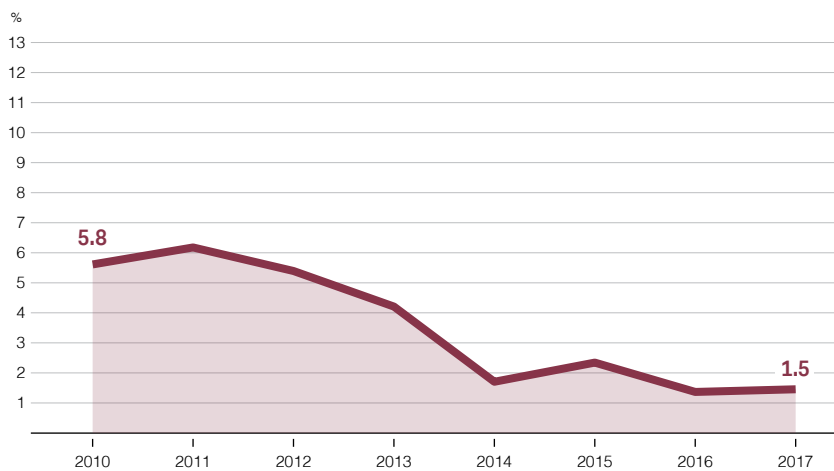
GDP EVOLUTION IN US DOLLAR VALUE

Source: IMF



GDP GROWTH

Source: IMF



GDP per capita
US\$15,070

GDP per capita (PPP)
US\$24,537

Inflation rate
2.2%



PERU AT A GLANCE

Source: IMF, data for 2017

Capital city: Lima
GDP: US\$215.2 billion
GDP growth: 2.5%
Head of State: President Martín Vizcarra
Total investment (% of GDP): 21.4%
Gross national savings (% of GDP): 20.1%
Current account balance (% of GDP): -1.3%



DEMOGRAPHIC DATA

Source: IMF, data for 2017

POPULATION
31.8 MILLION

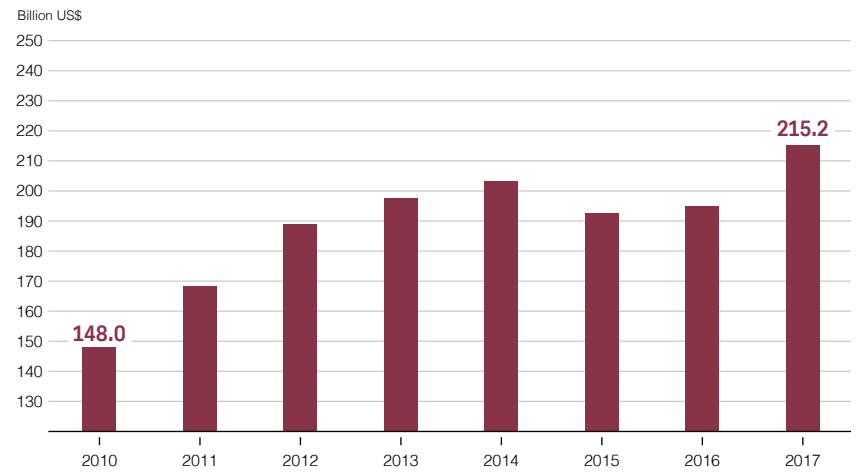
UNEMPLOYMENT RATE
6.7%



PERU

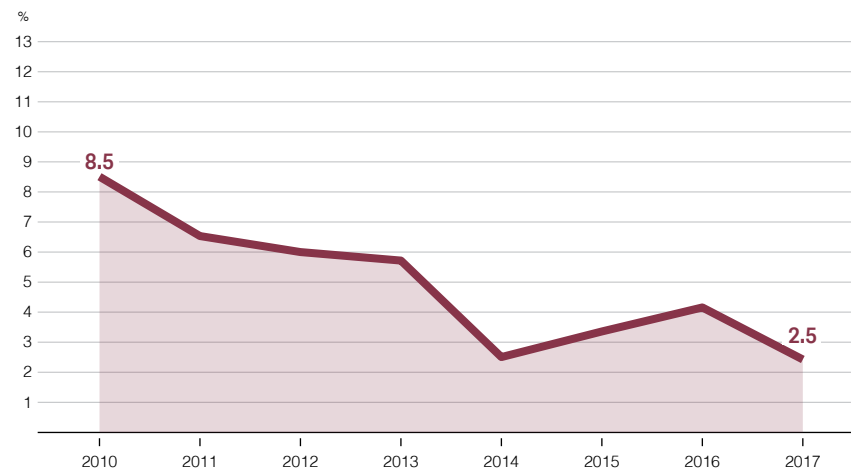
GDP EVOLUTION IN US DOLLAR VALUE

Source: IMF



GDP GROWTH

Source: IMF



GDP per capita
US\$6,762

GDP per capita (PPP)
US\$13,334

Inflation rate
2.8%



VENEZUELA AT A GLANCE

Source: IMF, data for 2017

Capital city: Caracas
GDP: US\$210 billion
GDP growth: -14%
Head of State: President Nicolás Maduro
Total investment (% of GDP): 10%
Gross national savings (% of GDP): 12.1%
Current account balance (% of GDP): 2%



DEMOGRAPHIC DATA

Source: IMF, data for 2017

POPULATION
31.4 MILLION

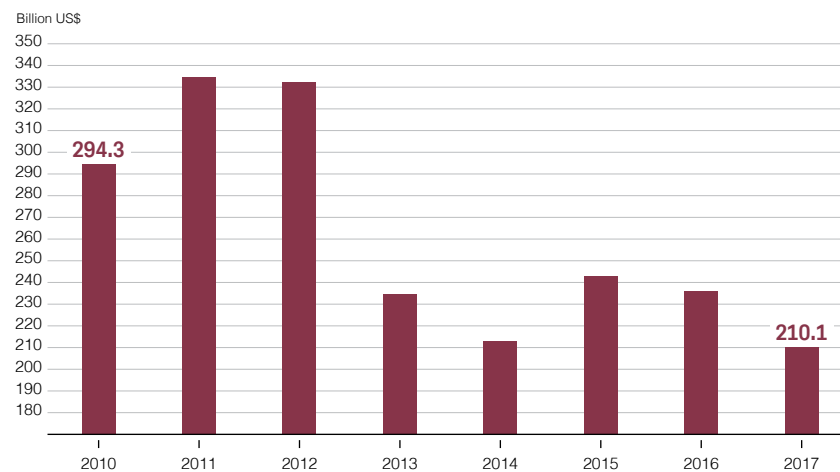
UNEMPLOYMENT RATE
27.1%



VENEZUELA

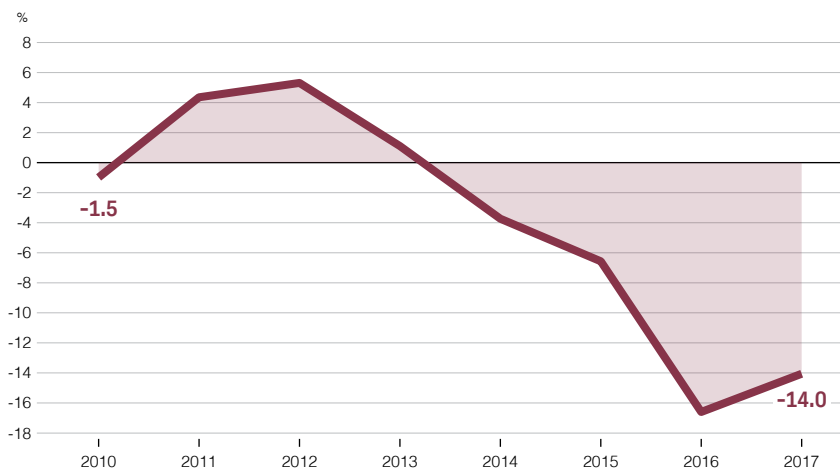
GDP EVOLUTION IN US DOLLAR VALUE

Source: IMF



GDP GROWTH

Source: IMF



GDP per capita
US\$6,684

GDP per capita (PPP)
US\$12,113

Inflation rate
1,087.5%



ECUADOR AT A GLANCE

Source: IMF, data for 2017

Capital city: Quito
GDP: US\$102.3 billion
GDP growth: 2.7%
Head of State: President Lenin Moreno
Total investment (% of GDP): 24.1%
Gross national savings (% of GDP): 23.7%
Current account balance (% of GDP): -0.4%



DEMOGRAPHIC DATA

Source: IMF, data for 2017

POPULATION
16.8 MILLION

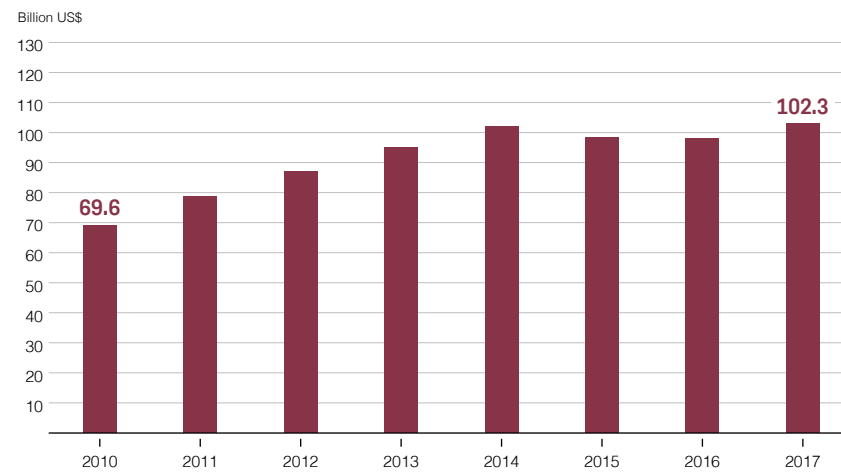
UNEMPLOYMENT RATE
4.6%



ECUADOR

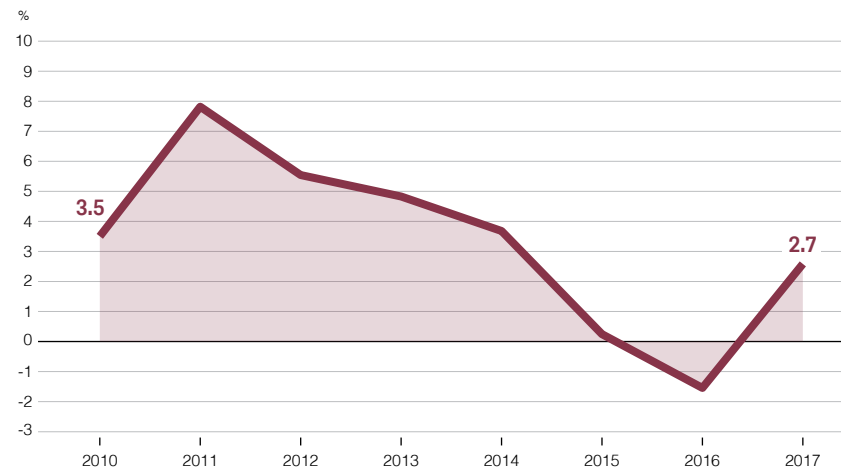
GDP EVOLUTION IN US DOLLAR VALUE

Source: IMF



GDP GROWTH

Source: IMF



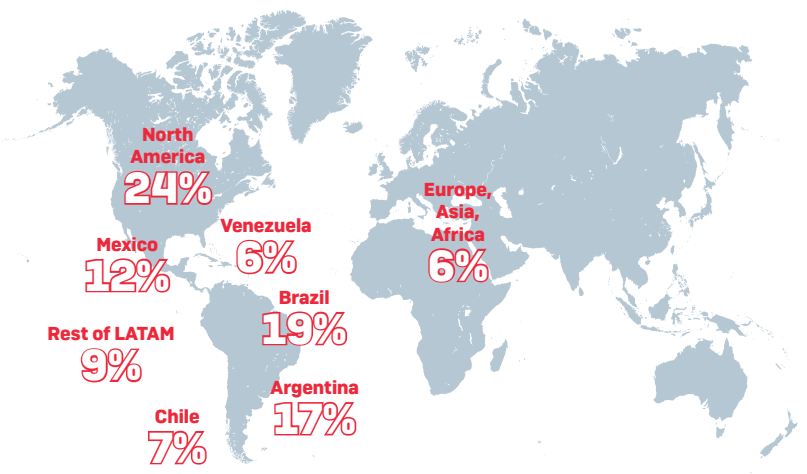
GDP per capita
US\$6,098

GDP per capita (PPP)
US\$11,482

Inflation rate
0.4%

“Facilitate the sustainable business development of the Latin American Petrochemical and Chemical industry.”

APLA is a non-profit association, founded in 1980. It is integrated by the main companies of the petrochemical and chemical sector of Latin America. It has more than 120 member companies, which with their subsidiaries amount to more than 330 companies, becoming the ideal platform for the development and consolidation of business in the industry.



Objectives

- To promote networking spaces and encourage professional relationships among companies and executives.
- To provide information, statistical data and updates on the latest trends.
- To promote the training and development of young students.
- To represent the Latin American Petrochemical and Chemical Industry in front of peer organizations around the world.

“To promote networking spaces and encourage professional relationships among companies and executives.”

Latin American Petrochemical Annual Meeting

It is the meeting point for the leaders and decision-makers of the Petrochemical and Chemical Industry in the region. It is the perfect environment to develop and consolidate business, exchange knowledge, generate valuable contacts and gather information on trends, challenges and market solutions.

Latin American Logistic Meeting

It is the ideal environment to be up to date in terms of process improvements, technologies and trends. The event allows for the exchange of best practices and the generation of new business opportunities.

“To provide information, statistical data and updates on the latest trends.”

Latin American Petrochemical Yearbook

Statistical data on more than 80 petrochemical and chemical products from Latin America.

Webinars

Periodic seminars through which different specialists of the sector provide their vision and training on on different topics.

“To promote the training and development of young students.”

APLA LABS program

The APLA LABS program is designed to provide young students with new knowledge through exploration and inquiry.

Learn through playing?

Yes, it is possible, with programs based on exploratory and in-depth activities, motivational learning, innovation, future vision, and the development of decision-making and teamwork.

“To represent the Latin American Petrochemical and Chemical Industry in front of peer organizations around the world.”

Associations and Chambers from all over the world are part of a strategic alliance with APLA in order to strengthen the Latin American Petrochemical and Chemical Industry.



Next Events



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Introduction to Mexico

"The supply of raw materials is a significant issue. The 2013 energy reform will have profound benefits for the wider chemical industry. The priority now is to see how we can speed up the reform and how we can have a transition period before new companies emerge."

- Miguel Benedetto Alexanderson,
general director,
ANIQ



Solid Demand Factors but Political Uncertainty



Investors are following closely the latest political changes as well as the NAFTA renegotiation

'It was the best of times, it was the worst of times'. Looking back at the current period, it might be tempting to refer to Mexico's economy and wider macro picture by using Charles Dickens' famous epithet. On the one hand, compared to its major Latin American peers, Mexico's economy has performed reasonably well in recent years, given that Brazil is crawling itself out of its worst ever recession, but Mexico has chalked up an average of 2.5% annual GDP growth over the last five years, coinciding with Enrique Peña Nieto's administration. Mexico has also amassed real manufacturing prowess: it is now the fourth largest vehicle exporter in the world, for example.

On the other hand, there is an encroaching sense of uneasiness among business leaders. True, the economy is doing reasonably well, but GDP growth slipped from 2.9% in 2016 to 2% in 2017, a significant slowdown. In fact, industrial production fell in nine of the twelve months leading up to October 2017. Furthermore, the United States has been driving a hard bargain in the NAFTA negotiations which has unsettled some investors. Adding to this climate of uncertainty, Mexico held presidential elections on July 1st. As frontrunner during the campaign, Andrés Manuel López Obrador (known as AMLO) threatened to scrap investor friendly policies such as the landmark 2013 energy reform. As president elect, he and his team seem to have moderated their position and probably

the new government will keep the reform. Yet, how the new government's policies shape up remains a question mark. Other factors dampening the mood are that 2017 was the most violent year on record, and that the government has been carrying out a fiscal consolidation program which has led to a curtailing of its infrastructure spending – this has acted as a drag on the economy. Investors are generally more worried about the prospect of Obrador's left-wing populism than they are about NAFTA. Underscoring this, Focus Economics' consensus forecast of economists predict Mexico's GDP growth will be 2.2% in 2018, which is lower than forecasts for all other Latin American countries except Ecuador and Venezuela.

Mexico revs up its engine

Mexico's consumption of chemicals rose by over a fifth from 2012 to 2016. Two key factors mean that demand for petrochemicals and chemicals in Mexico are strong and will remain so going forward. First is a rising middle class: according to Euromonitor International, 47% of households were in this category by 2015, equivalent to 14.6 million households, and this number is set to rise to 18 million by 2030, equivalent to all the households in Spain. Such households devote almost half of their budget to discre-

tionary goods and services, like food, alcoholic beverages and personal care, as well as having more money to spend on household goods; all products with a high demand for thermoplastic resins, as well as specialty chemicals.

There is also an increasing demand for chemicals from food and feed which points to growing food demand and agricultural market in Mexico. "Food and feed, water treatment, household and personal care are some of the key high growth industries for us. A growing middle class with more disposable income as well as the growing global requirement for food and clean water are some of the main growth drivers behind this," explains Gerardo Manzano Alba, executive director of fast-growing Latin American distributor Pochteca.

There is still a large gap between middle class incomes and those of the highest earners however, with the middle class being closer to the poor in income level. Despite Mexico's leading position in the production of cars and home appliances, less than half of middle income households own a car and dishwashers are a rare luxury. Therefore domestic demand is not necessarily driving industrial production. This situation points to another important demand driver for chemicals in Mexico, namely export growth. Exports grew by 13.2% in the first ten months of 2017, with consumer goods rising by the

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MEXICO AT A GLANCE

Source: IMF, data for 2017

Capital city: Mexico City
GDP: US\$1,149.2 billion
GDP growth: 2%
Head of State: President Enrique Peña Nieto / President Andrés Manuel López Obrador (from December 1st, 2018)
Total investment (% of GDP): 23.2%
Gross national savings (% of GDP): 21.5%
Current account balance (% of GDP): -1.64%

DEMOGRAPHIC DATA

Source: IMF, data for 2017

POPULATION
123.5 MILLION

UNEMPLOYMENT RATE
3.4%



GDP per capita
US\$9,304

GDP per capita (PPP)
US\$19,303

Inflation rate
6%

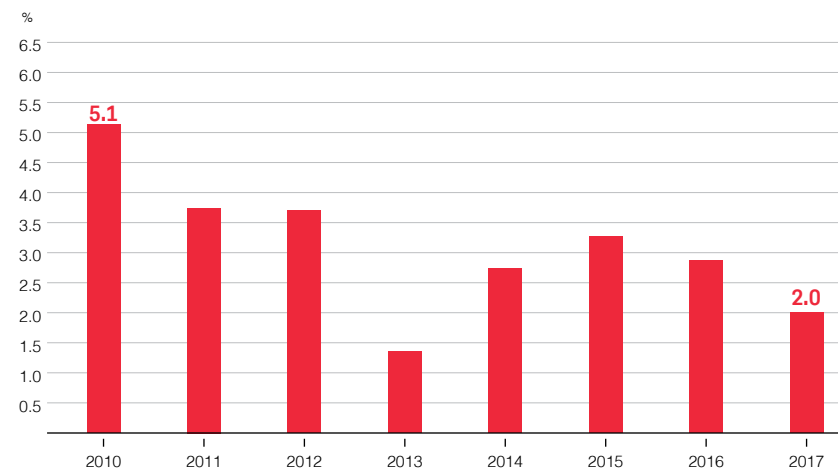
GDP EVOLUTION IN US DOLLAR VALUE

Source: IMF



GDP GROWTH

Source: IMF



GOVERNMENT GROSS DEBT

Source: IMF



Image courtesy of Shutterstock



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most (18%) and automotive exports rising by 12.1%. Aerospace is another important driver, with the value of exports rising from US\$3 billion in 2008 to around US\$7.5 billion in 2016.

Industries like automotive demand chemicals such as lubricants and paints and coatings, which is good news for the chemical industry. “Mexico exports more manufactured goods than the rest of Latin America combined,” says Manzano.

Recovering Extractive Industries

Any analyst of the extractives industries knows that the oil and gas and mining industries go through dramatic cycles, and Mexico is no exception. The country’s main mineral commodities are gold, silver (Mexico is the world’s largest producer), copper and zinc which took a hit during the end of the commodity super-cycle since 2014 but have recovered more strongly than other minerals. The gold price, for instance, had its best year since 2010 in 2017. Buoyed by these

trends, Mexico experienced a 50% year-on-year increase in mining investment in 2017. A stronger gold and silver market has been welcome news for the chemical sector given that sodium cyanide is used to extract the minerals. Evonik and Grupo Idesa have reaped the benefits through their joint venture to produce sodium cyanide in Mexico and GTM recently signed a partnership agreement with Chemours to distribute the compound. “If gold and silver production in Mexico continues to develop positively there will be the opportunity to expand. Mexico is the most important market in terms of sodium cyanide in the world given that it is a leading producer of gold and silver. We have faith in the Mexican market and want to be close to our customers who are expanding capacity and looking at new projects,” comments Martin Toscano, president of Evonik Industries in Mexico.

Mexico’s oil and gas industry was totally dominated by Pemex, the state-owned company, until President Peña Nieto’s 2013 landmark energy reform. Most analysts hailed the move given Pemex had become

increasingly inefficient and production levels had dropped. The consensus among the petrochemical industry is that the reform will lead to oil and gas production rising again as private players enter into the market, and this is gradually filtering through to more demand for chemicals. This is gradually filtering through to more demand for chemicals. “Unfortunately, sales for oil and gas have suffered over the last few years as the industry has declined dramatically. However, we are seeing signs of recovery now,” says José M. Berges, CEO of GTM, a large distributor.

There are of course risks on the horizon but deep structural factors such as Mexico’s diversified economy, buoyant industrial production, and growing middle class should keep demand for petrochemicals strong in the coming years: “Three basic industries continue to grow in Mexico: automotive, agriculture and aerospace. These industries drive additional petrochemical demand growth, supported by imported raw material,” concludes Rina Quijada, vice president Latin America, IHS Markit. ■

MAJOR PETROCHEMICAL COMPLEXES





Miguel Benedetto Alexanderson

General Director
**NATIONAL ASSOCIATION OF
THE CHEMICAL INDUSTRY
(ANIQ)**

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We were the first country in Latin America to adopt *Responsabilidad Integral* 26 years ago. Since then, we have achieved a 25% reduction in the release of greenhouse gases and reduced water consumption per tonne produced.

”

How many members does the association have today, and what are the advantages of joining ANIQ?

Today we have 262 members. We have incorporated several companies from the distribution sector that we did not have before, whilst the number of manufacturers has remained more or less the same over the last couple of years. We divide the chemical industry into 19 sections depending on what each company produces. So, for example, we have sections for synthetic fiber manufacturers, pigments, colorants, synthetic resins, lubricants, etc. Companies receive a specialized service depending on their sub-sector or the products they make.

At the same time, we have divided the interactions we do with the government into six main areas: energy, foreign trade, environment, safety and hygiene, logistics and trade unions. We offer effective representation to the government for the development of new protocols and legislation, either for the industry as a whole or for private companies. ANIQ is one of the few, if not the only, organizations that unites manufacturers and distributors. We are implementing the Responsible Care program at a manufacturer level and we have six Responsible Care programs for distributors.

What are some of the key issues in Mexico's chemical industry at the moment?

The supply of raw materials is a significant issue. The 2013 energy reform will have profound benefits for the wider chemical industry. The priority now is to see how we can speed up the reform and how to have a transition period before new companies emerge. Another important issue is trade agreements. Mexico is currently negotiating trade agreements with Canada, the United States, Brazil and Argentina. Through our relationship with Congress we are working on avoiding the prohibition of several plastic products, and creating a list of products we have in Mexico. This way, we will know what protocols to create to authorize the use of these in the local market.

What benefits does the *Responsabilidad Integral* program bring to the industry and the environment?

We were the first country in Latin America to adopt *Responsabilidad Integral* 26 years ago, and we were the tenth country in the world to do so. Since then, we have been developing standards and monitoring the performance of the chemical industry in reducing water usage. We have also achieved a 25% reduction in the release of greenhouse gases and reduced water consumption per tonne produced. We are aiming for better energy efficiency and have been working on a measurement system for the last three years. We have received awards from the government for those companies who have over 85% good performance.

How game-changing is Braskem Idesa's Etileno XXI project for the Mexican industry, and how do you expect Mexico's deficit in petrochemicals to evolve going forward?

The investment is very important because it sets a precedent that as an industry we had not had for the last 25 years. It has precipitated the opening of new projects and generated the conditions for long-term contracts in the sector. Mexico's industry is growing at a fast pace of 5% to 6% annually over the last 15 years, and this has caused a significant deficit. In five years from now, we expect this deficit will be reduced by new producers in Mexico.

What other challenges are on the horizon for the industry going forward?

As well as the supply of raw materials and the trade agreement with the United States and Canada, another significant factor to take into consideration is the commitment made by the Mexican government to reduce greenhouse gases by 30% in 2030 and by 50% in 2050, included in the Paris climate agreement. ■



Image courtesy of Pemex

Global Business Reports
Industry Explorations

The Energy Reform

A brave new world

“We are facing a historical opportunity to change what has been preventing the country to move forward,” proclaimed President Enrique Peña Nieto as he presented his government's ambitious energy reform to Mexico's congress in December 2013. The energy reform promised to prize open Mexico's oil and gas markets, as well as the production of basic petrochemicals, to private competition after nearly 80 years of them being dominated by state-owned company Pemex. Shortly after Peña Nieto's speech, Mexico's congress approved amendments to the constitution to allow the reform to be implemented.

Due to a stifling tax burden levied on it, years of underinvestment and an overly powerful oil union, Pemex's competitiveness has steadily decreased in the last few decades and its reliability as a feedstock partner has suffered. This helps explain why Mexico's petrochemical industry has been in decline since the 1990s, when it was once the world's seventh largest producer. The problem has been compounded by plummeting oil prices since 2014, which shifted Pemex's focus away from petrochemicals to an extent that Mexico is severely lacking in petrochemical refining capacity. As Ricardo Diogo, director of business development at tank storage company Oiltanking Mexico comments: “Refineries need upgrades which Pemex does not have the money to complete, and refining capacity is actually decreasing compared to a growing yearly demand of 2% to 3%.”

However, provided that the new López Obrador administration does not sabotage the energy reform, this landmark piece of legislation will open up Mexican oil and

gas exploration and production, as well as imports from abroad, to private players. Immediately following its announcement there was cautious optimism among petrochemical players that feedstock supplies would become more competitive due to increased competition driving efficiency in Mexican production.

Four years on, refining capacity has not improved, but cautious optimism about the competitiveness of feedstock has given way to bullish predictions. Bidding rounds have generally been successful and some companies are now working in joint ventures with international players to produce crude oil and gas. “This is positive for the petrochemical industry and in four to seven years, the impact on feedstock will really be noticed,” predicts José Luis Uriegas, CEO of diversified petrochemical player Grupo Idesa.

Idesa was awarded the Onshore Development Block 24 (Tecolutla Block) in Veracruz and has established a joint venture with Canadian company International Frontier Resources to exploit its reserves. “We have already been approached by a private company selling ethane for next year, which represents a situation where, for the first time, companies other than Pemex are supplying ethane in Mexico,” continues Uriegas.

Many opportunities in the pipeline

It is not just domestic oil and gas production that is due to receive a boost. Imports of oil and gas from the United States are expected to increase as the importation market is opened up beyond Pemex as

well. Since December 2015, the Los Ramones (Phase 1) pipeline has added 2.1 billion cubic feet per day (bcfpd) of natural gas import capacity from Texas. In fact, according to the US Energy Information Administration (EIA), US gas exports to Mexico have doubled since 2013 to more than 4 bcfpd. “Mexico’s proximity to the United States allows it to be part of the US system in a low-cost way via short marine imports of feedstock. Secondly, Mexico will be able to receive gas coming from the United States via pipeline,” remarks Ralf van der Ven, commercial and business development director at Vopak Americas, a tank storage company.

The effects of the reform go even further. Another major impediment of Mexico’s manufacturing industry, including its chemical industry, is poor access to natural gas, and large parts of the country rely on more costly fuel-oil generation. Therefore, Mexican industry pays more for electricity than in the United States. With increased imports from the US market, the situation should become more balanced. This will have positive effects for the whole chemical value-chain as it will not only lower costs for chemical producers but will be a boon to other manufacturers, such as automotive producers, that are key sources of demand for chemicals in Mexico.

Increased reserves but potential political spoiler

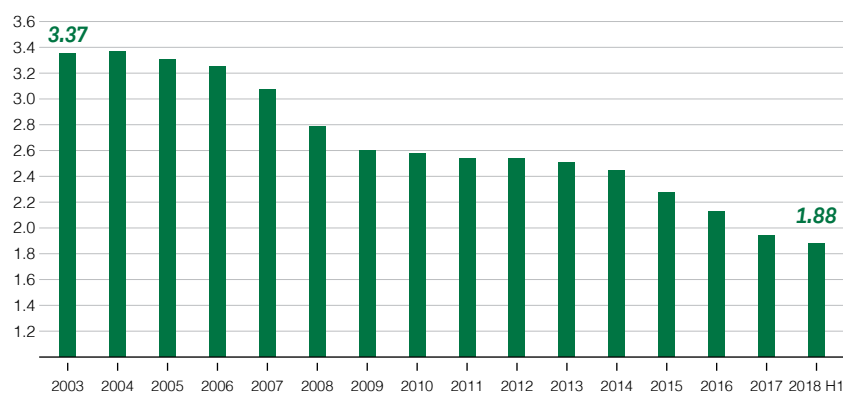
The first concrete results in terms of increased reserves stemming from the energy reform were realized in July 2017. A consortium of Houston-based Talos Energy, local Mexican company Sierra Oil & Gas, and Premier Oil of the UK made a discovery at their field which indicates of a massive 1.4 billion to 2 billion barrels of shallow-water oil. Meanwhile, Italian oil major ENI announced in July 2017 that it has discovered more oil at its Amoca field, which it now says holds at least 1.3 billion barrels of oil equivalent (BOE), about 90% of which is crude oil.

Putting this into context, according to Mexico’s National Hydrocarbons Commission, the country’s total proven and probable reserves are at 12.8 billion barrels. Mexico’s crackers are all ethane-based and therefore rely on ethane which is refined from natural

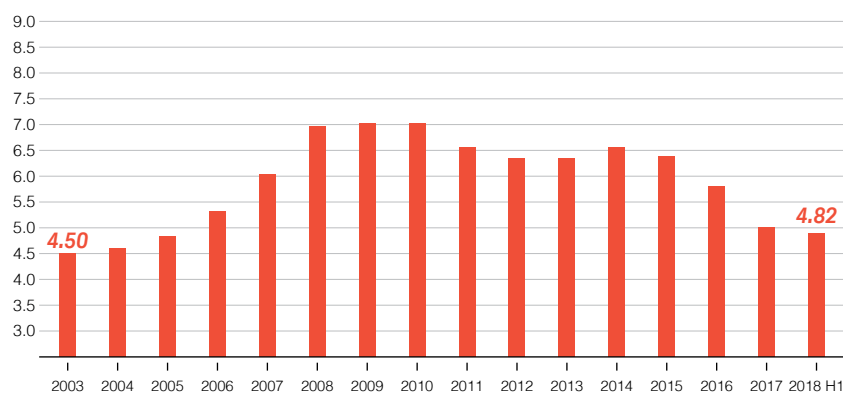
PEMEX' DECLINING OUTPUT

Source: Pemex

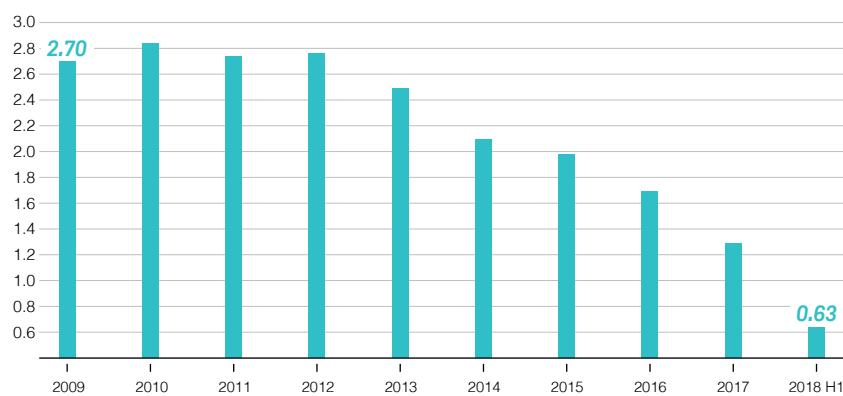
OIL PRODUCTION IN MILLION BARRELS / DAY



NATURAL GAS PRODUCTION IN BILLION CUBIC FEET / DAY



ETHANE DERIVATIVES PRODUCTION IN MILLION TONNES



gas, so oil is not as valuable to the industry but nevertheless, according to Sierra Oil & Gas CEO Ivan Andrea, 20 billion BOE are still to be discovered on and offshore Mexico.

The gains looked fragile when presidential candidate López Obrador’s threatened to cancel the energy reform, but now that he is becoming president and that he has put to-

gether his team, many industry leaders hope the new government will actually keep the reform. As Diogo of Oiltanking succinctly summarizes: “Mexico would lose if it went back on the energy reform given the country is producing 55% to 60% of what it was producing some 12 years ago and Pemex is still heavily indebted. Going back on the reform would harm Mexico.” ■

Gilberto Ortiz Muñiz & Gerardo Bazán Navarrete

GOM: Vice President Chemical Sector
GBN: President Petrochemical Branch
CANACINTRA



GOM



GBZ

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GOM: The petrochemical situation in Mexico has deteriorated. There were 52 plants in operation in 2015 but today there are only ten. Ethylene, urea and ammonia production have decreased significantly; in fact, their production is 20% of what it was before.

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What is the role of CANACINTRA in Mexico’s chemical industry?

GOM: The business chambers in Mexico abide by the Chamber Law which directs its associations to defend common interests and promote their industries with support programs, industrial relations, publications and by having exchanges with other countries. Our role is to inform and coordinate on government measures that support medium and small companies. We work with a large number of small companies in the chemical industry that do not have the resources on their own to represent themselves before the government. Additionally, we work a lot in partnership with ANIQ which represents larger companies.

How is the petrochemical industry performing in Mexico?

GOM: The petrochemical situation in Mexico has deteriorated. There were 52 plants in operation in 2015 but today there are only ten. Ethylene, urea and ammonia production have decreased significantly; in fact, their production is 20% of what it was before. All industries dependent on petrochemicals have been forced to import. The petrochemical industry originates in refining petroleum, and the refining of oil in Mexico has fallen to 30% of the total because the refineries have not been maintained, received investment or been expanded. Most of the gasoline is imported from the Gulf Coast of the United States. This whole area is full of refineries and from there 70% of the needs of the Mexican chemical industry are imported.

The government’s policy has been not to intervene in the production of petrochemicals and it wants us, the private sector, to increase production. The problem for private companies is that investments are not justified because imports are cheaper and of better quality. US competition prohibits Mexican industry to grow and there is no attractiveness in making investments. China wants to invest in the Salina Cruz refinery in Oaxaca and Salamanca in Guanajuato and is offering US\$350 million in investment where Pemex still owns the product but, other than that, no one else is interested in investing in the refineries.

Could you see Mexico developing its shale gas potential?

GBN: It is difficult and will take a long time to develop shale in Mexico, for several reasons. The Eagle Ford region in the United States has much dynamism and there is good infrastructure but we do not have this in Mexico. Also, the area in Mexico where the Eagle Ford formation extends to is very dangerous due to armed groups, so investors are afraid. Additionally, there is uncertainty about the extent of Mexico’s shale resources and geological studies are needed to pass to the reserve stage.

What could be done to improve the situation for the petrochemical industry?

GBN: A study was conducted to understand how to strengthen the Mexican petroleum industry and improve the supply of raw materials in Mexico with private participation. An important way to do this is through audits to determine where investments should be made at Pemex plants. Developments such as private interest in the Tula refinery in Hidalgo and Salamanca are steps in the right direction. It is challenging, however, as the fact that Pemex is state-owned means investors are wary, and there are union and bureaucracy problems at Pemex.

The petrochemical industry is made up of different segments. First, the basic petrochemical industry includes the production of ethylene, which accounts for a lot of volume. Then the secondary segment comprises of specialty chemicals from basic petrochemicals and the tertiary segment consists of specialty chemicals made from intermediate petrochemicals. In Mexico there is a lot of manufacturing activity in the third segment, which is very vulnerable because it depends on the whole petrochemical chain.

How is the macroeconomic situation affecting the industry?

GOM: The domestic market has the potential to grow a lot but we depend on the US economy, which went through a difficult stage recently. In 2018, the US economy will grow again but damage has been done to our economy with less distributed growth. Now adjustments are being made to change taxes, subsidies and other support for Mexican industry which will help the market to grow. The main problem is that the economy is growing but only in a few sectors such as automotive. ■

Trade Agreements



USMCA replaces good old NAFTA

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When President Trump was sworn in as the 45th President of the United States, there was a mood of unease, even fear, among Mexican businesses given Trump had threatened to scrap the North American Free Trade Agreement (NAFTA). Trump's position rested on the assertion that the United States had a trade deficit with Mexico of more than US\$64 billion (2016) and that his country was losing manufacturing jobs to Mexico. In the firing line was Mexico's automotive production; a key plank of US' demands was that the content requirement for autos produced in North America should increase.

NAFTA was hugely important in the growth of Mexico's manufacturing industries as it provided tariff free access to the world's largest market and enticed many American OEMs to move manufacturing down to Mexico to take advantage of lower labor costs. In terms of the chemicals industry, since NAFTA came into effect, trade in chemicals between NAFTA countries more than tripled from US\$20 billion to US\$63 billion in 2014, according to ANIQ and its equivalent associations in the US and Canada. The American Chemistry Council (ACC) says that duty-free exports to

Canada and Mexico support 46,000 chemical sector jobs in the US, and that, since NAFTA started in 1994, US exports to the other two countries in North America have soared from US\$13 billion to US\$44 billion in 2018.

After a fairly long negotiating process, in August 2018 the US and Mexico announced a preliminary agreement to revise NAFTA that maintained the core of the original trade pact but included updates to provisions on several items, notably auto manufacturing. For some weeks there were rumors that Canada may not join the new agreement, reducing NAFTA to a bilateral trade pact between the US and Mexico, but on September 30th, a new deal was finally struck, including the three countries.

"It is clear that the relationship between Trump and Trudeau is not at its best moment, but the majority of the initial treaty should be maintained because it has provided good results for the three countries. For the chemical and petrochemical industry, the treaty is very important. The U.S. sells US\$20 billion worth of chemical and petrochemical product to Mexico, every year – but also Mexico and Canada sell important volumes", affirmed José Luis Uriegas, CEO

of Grupo Idesa and past president of APLA. Indeed, leaving the political issues aside will benefit the chemical industries across the three countries, according to Miguel Benedetto, general director of the Mexican Chemical Industry Association (ANIQ): "The chemical industries in the three countries are broadly in alignment." ANIQ has been leading on negotiations for the chemical sector and rules of origin for all the industrial and agricultural sectors in Mexico. Under the new agreement, that still needs to be approved by the three countries' legislatures and therefore is not expected to go into effect until 2020, cars will need to have 75% of its components manufactured in North America to benefit from zero tariffs (as opposed to 62.5% before), and 30% of the manufacturing work on new vehicles must be completed by workers earning at least US\$16 per hour – this is triple the salary of the typical car manufacturing worker in Mexico.

Before the new agreement was reached, the Chemistry Industry Association of Canada (CIAC), ANIQ, and the American Chemistry Council (ACC) made a joint statement calling for "strong protections for cross border data flows, which is an essential el-

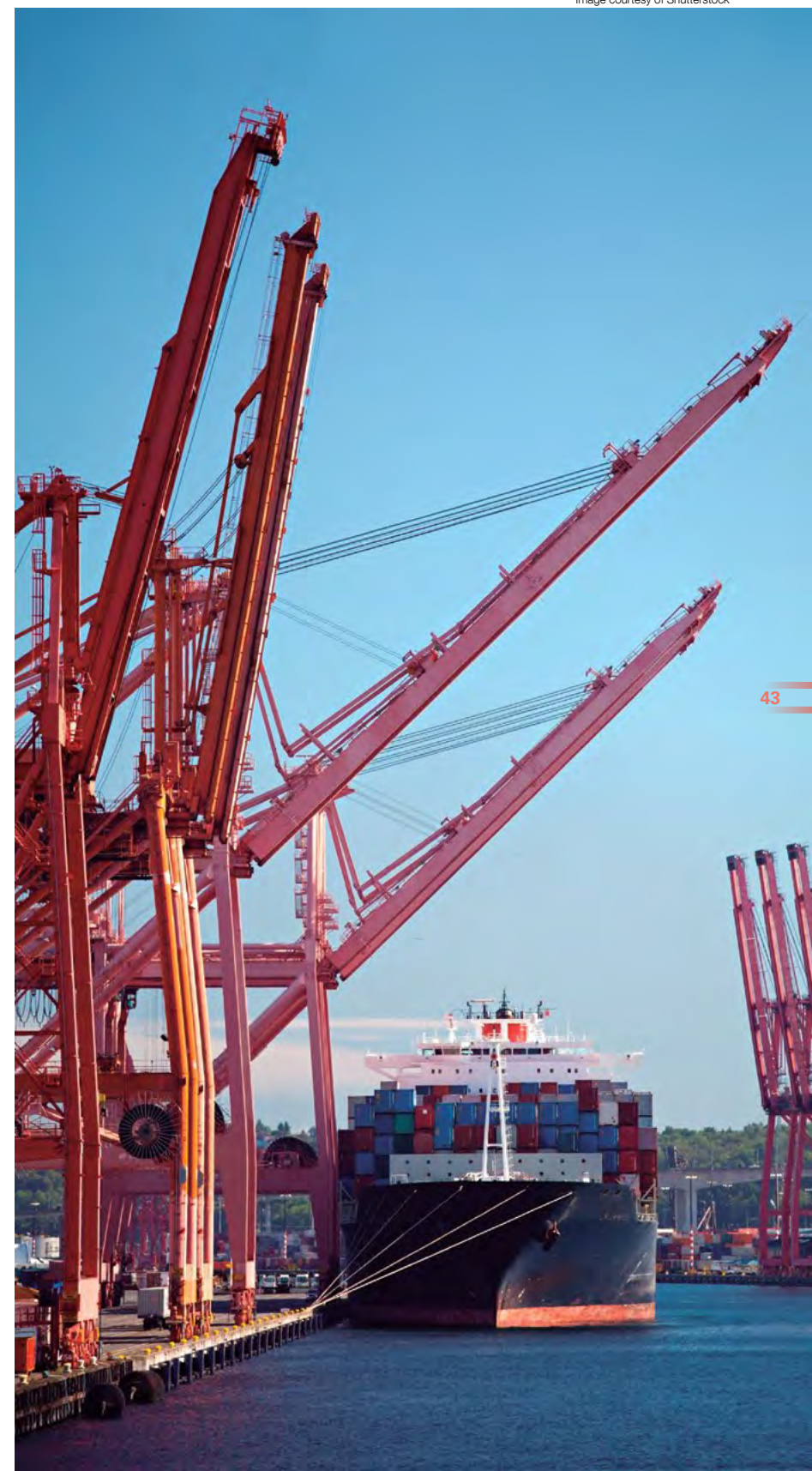
ement of global value chains. An updated NAFTA should also set key standards, such as on the competitive practices of State Owned Enterprises (SOEs). It should also close inefficiencies on trade disciplines that are already codified in the agreement, including rules of origin and duty drawback." The associations also advocated for enhanced regulatory cooperation from all three jurisdictions to promote innovation, growth and jobs, whilst safeguarding health and safety. Indeed, the new USMCA agreement contains more stringent intellectual property protections.

Trading Places

Along with putting significant resources into the NAFTA renegotiations, over the last months the Mexican government has also been pursuing a strategy of trade diversification in order to broaden free trade opportunities for Mexico's companies. This follows a trend of successive Mexican governments being open to free trade and it already has 44 free trade agreements with countries around the world, which brings tangible benefits to its petrochemicals industry. According to Uriegas, it is a key advantage: "Producers benefit from lower duties and the absence of non-tariff barriers. For example, we have a trade agreement with Israel which has allowed us to gain 65% stake in the ethanolamines market in that country."

Before USMCA was finalized, in April 2018 Mexico reached an agreement with the European Union to virtually eliminate tariffs. Also in April, Mexico ratified the Trans Pacific Partnership (of which the U.S. is not a party). Furthermore, in 2018, Mexico and Brazil are due to conclude a comprehensive free trade agreement where the chemical industry will make up 75% of the total agreement, according to ANIQ. The Mercosur trade bloc of South American nations is also prioritizing improved trade ties with Mexico and Mexico and Argentina are discussing a free trade agreement. All these moves are seen as an effort by Mexico to diversify its destination markets and rely less on trade with its northern neighbor. ■

Image courtesy of Shutterstock



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Petrochemicals and Chemicals Industry In Mexico

"Access to competitive raw materials and markets is important. From Coatzacoalcos you can reach the main Mexican and export markets. A key advantage is Mexico's trade agreements with over forty countries, which means we benefit from lower duties and the absence of non-tariff barriers. For example, we have a trade agreement with Israel that has allowed us to gain a 65% stake in the ethanolamines market in that country."

- José Luis Uriegas,
CEO,
Grupo Idesa



Mexico's Petrochemical Industry

Braskem Idesa puts Mexico on the map

Before the energy reform in 2013, the production of basic petrochemicals was reserved to the Mexican state through Pemex. Mexico's petrochemical production had been in decline for years, because Pemex decided to invest less in the industry after Mexico joined the General Agreement on Tariffs and Trade (GATT) in the early 1990s, and then NAFTA in 1994, which meant its market became flooded with petrochemical products from abroad. This not only meant Pemex produced less basic petrochemicals but also that the private sector in Mexico invested less in downstream capacity.

Therefore, the move by Braskem Idesa in June 2016 to open a new 1.05 million mt/y integrated polyethylene complex in the state of Veracruz, the outcome of a US\$5.2 billion investment, was a cathartic moment for the industry. The project, named Etileno XXI, is the result of a joint venture between Brazilian petrochemical producer Braskem, the largest petrochemical company in the Americas, and Grupo Idesa, one of Mexico's largest petrochemical companies. One of the primary reasons for the complex's construction was to help plug Mexico's gaping trade deficit in polyethylene, replacing US\$1.5 to US\$2 billion of poly-



Image courtesy of Grupo Idesa

ethylene imports. The scale of the project is immense. As Stefan Lepecki, CEO, Braskem Idesa, put it: "This is the most significant project ever in Latin America, and even in North America there has not been a project like it for 20 or 30 years."

So far, the results of Etileno XXI have been positive. According to José Luis Uriegas, CEO of Grupo Idesa, the rate of operation

was above 80% in 2017. There have been some hiccups as run rates fell slightly in Q3 and Q4 of 2017 due to supply issues with Pemex, but Braskem Idesa is confident these issues will not cause problems going forward. "In the oil and gas market it is important to maintain a good level of investment to sustain production rates. This will therefore be important for Pemex going

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IDESA

THE INDUSTRY BEHIND YOUR INDUSTRY





José Luis Uriegas

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CEO
GRUPO IDESA

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The energy reforms were very deep. Now Mexico is in the process of implementing them and the private sector is now active in upstream, midstream and downstream. This is positive for the petrochemical industry and in four to seven years, the impact on feedstock will really be noticed.

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Grupo Idesa was founded in 1956. Could you provide an overview of the company and its focus areas today?

The company started with the production of phthalic anhydride in a small plant and, after that, grew through different petrochemical complexes, first in Puebla, then in Tlaxcala and the latest complex we have is in Coatzacoalcos, in southern Veracruz State. Coatzacoalcos is well located as it is near to a lot of feedstock supplies. Here we buy ethylene oxide and ammonia from Pemex and ethane for Braskem Idesa. Our sodium cyanide plant there buys natural gas, ammonia and caustic soda. In addition to the production of different chemical products, in the last fifteen years we have diversified by creating companies focused in distribution, logistics, construction systems and recently in upstream oil and gas.

What are the main drivers of the petrochemicals market in Mexico?

Access to competitive raw materials and markets are important. From Coatzacoalcos you can reach the main Mexican and export markets. A key advantage is Mexico's trade agreements with over forty countries, which means we benefit from lower duties and the absence of non-tariff barriers. For example, we have a trade agreement with Israel that has allowed us to gain a 65% stake in the ethanolamines market in that country.

How successful have Etileno XXI and the joint venture with Evonik been?

The ramp up at Etileno XXI was very smooth and the rate of operation in 2017 was above 80%. On average we produce 80,000 mt per month and sell 50% to 60% domestically, a figure we would like to increase to 80%. With regards to the Evonik partnership, we started operations in September 2016 and the ramp up has gone well as we are now at 80% to 90% of capacity. Sodium cyanide is an important ingredient for the mining industry as Mexico is the world's largest silver producer and among the top ten of gold which sodium cyanide helps extract. The market is healthy, growing from 70,000 mt/y five years ago to 130,000 mt/y in 2017. Our capacity is 40,000 mt/y and we plan to expand it.

How affective have the energy reforms been in leading to more competitive feedstock?

The reforms were very deep. Now Mexico is in the process of implementing them and the private sector is now active in upstream, midstream and downstream markets. This is positive for the petrochemical industry and in four to seven years, the impact on feedstock will really be noticed. We have already been approached by a private company selling ethane for next year, which represents a situation where, for the first time, companies other than Pemex are supplying ethane in Mexico.

Idesa was awarded the Tecolutla field and is working in a 50-50 joint venture with International Frontier Resources of Canada, who have the experience in upstream that we do not. We expect to start production in the first quarter of next year. We have two main objectives in this project: in the long term to be vertically integrated, in the short to medium term to learn how to participate in upstream and take advantage of the opportunities to sell feedstock to other players.

Are Idesa's recent investments a vote of confidence in the Mexican petrochemical industry?

If a country has good access to feedstocks and markets, the prospects are good. Mexico will have both when the energy reforms properly take effect. Although there is a lot of talk about NAFTA, the chemical industries across North America support a trade agreement. We expect some modernization of NAFTA given it was signed twenty years ago and there was no chapter on energy; including this would protect the investments of Americans and Canadians.

Where would you like to see Idesa in five years' time?

Our new vision is to be active in upstream, midstream and downstream, so in five years' time we will have a significant presence in all three. At present, we are in the downstream market due to our petrochemical activities and in the midstream due to our logistics business. We will participate in future bidding rounds and we may work with other companies that have been awarded fields. We also plan to grow our port terminal in Veracruz to handle fuel. ■



Stefan Lepecki

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CEO
BRASKEM IDESA

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Our intention at Etileno XXI is to run at 100% capacity. So far, market penetration and the market's reaction have been very good both domestically and internationally, as we are exporting to more than 40 countries.

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Braskem Idesa (Etileno XXI Project) has performed well since it became operational in April 2016. What are the reasons for this?

We are very happy with the results so far, as we have almost 43% market share of high density and low density polyethylene in Mexico. The project's success is due to the strong support of its two sponsors, Braskem and Idesa. Both believed from the start it was the right project with the right fundamentals behind it, such as access to competitive feedstock and a large market. Etileno XXI is the most significant project ever in Latin America and even in North America there has not been a project like it for 20 or 30 years. This meant there were a lot of challenges such as local financing and technical issues when we started. Furthermore, Etileno XXI has succeeded because it has been an important initiative of Mexico as a whole. In the late 2000s, the government showed a firm commitment to develop the petrochemical industry with the private sector and to reduce the trade deficit in petrochemicals. The base of the project is an ethane contract by Pemex.

How cutting edge is the technology used in Etileno XXI?

Our intention since the beginning was to have the latest technologies. We used Technip's technology for the cracker and Inneos and LyondellBasell's for the polyethylene plants. These are very well proven but also state-of-the-art. The construction phase was a tremendous challenge because of the high volumes of materials involved, such as concrete, steel structures, piping and equipment. Technically speaking, the most critical aspect of the construction phase was the logistics in terms of transporting equipment from countries all around the world to Coatzacoalcos where the project is based.

Run rates fell slightly in H2 2017 partly due to supply issues with Pemex. How confident are you that this will not occur again?

In the oil and gas market it is important to maintain a good level of investment to sustain production rates. This will therefore be important for Pemex going forward. Mexico is going through an important transition from a monopoly in its oil and gas market

to an opening up of the market to private companies. In this sense, the energy reform is not an easy task but it has huge potential. Our intention is to run at 100% capacity. So far, market penetration and the market's reaction have been very good both domestically and internationally, as we are exporting to more than 40 countries.

Where has demand been particularly strong?

When we first began production our focus was on volume and exporting some volume to Asia, but gradually we are changing this strategy to focus on North America, Europe and Central America, taking advantage of our synergies with Braskem. We are very happy with the speed of our market penetration and the relationships we have developed with our clients. Around 65% of our production is dedicated to the domestic market which is a great result. Our intention is to gradually increase this level –we want to be close to clients and help make the whole Mexican petrochemical value chain more competitive.

The United States will add 12 million mt of ethylene capacity by 2022. How will Braskem Idesa compete against such competition?

The global polyethylene market is vast. Global demand will continue to grow, including from China, so there is space for new capacity. Also, complex projects due to come on stream are facing delays, therefore new capacity will be spread out. Nevertheless, we in Mexico have to be ready by being as competitive as possible in production, quality, transportation, logistics and developing products and solutions together with our clients.

How confident are you about Mexico's economy?

Being in the polyethylene business, we serve many different sectors. When we talk with our clients we see a positive outlook. The Mexican economy is very strong and together with Brazil it is the most important in Latin America – it will continue to grow consistently. The market potential is tremendous in Mexico due to the likely effects of the energy reforms on feedstock and because Mexico is very well located to send products to key markets globally. ■



Abraham Klip Moshinsky

CEO
UNIGEL MEXICO

Pemex's refineries are not operating efficiently, so there is not enough propylene available. Therefore, we now import MMA from Brazil. [If Mexico invests in its refining capacity], then it will be easy to increase our production again.

How important is Mexico in terms of Unigel's manufacturing capacity in Latin America?

The main products we produce are acrylic sheets via our Plastiglas unit. We also have two other companies in Mexico, Unigel Quimica and Unigel Acrílicos. Unigel's operations in Mexico represent about 15% of our EBITDA. We used to have an agreement with Pemex to produce acrylonitrile for which the main raw material is propylene, which comes from refineries. A by-product from producing acrylonitrile is hydrogen cyanide (HCN) which is used as a raw material for sodium cyanide, as well as methyl methacrylate (MMA), which Unigel is the leading producer of in Latin America and is used to make acrylic sheets. Unfortunately Pemex's refineries are not operating efficiently, so there is not enough propylene available. Therefore, we stopped our partnership with Pemex and now import MMA from Brazil. We are now only producing sulphuric acid in our plants and the challenge is to reach the levels of previous manufacturing that we had in Mexico.

Do you expect more propylene to be available in Mexico in the coming few years?

López Obrador said he wants to invest in two new refineries and refurbish many existing ones. If this happens and there is more propylene in Mexico, then it will be easy to increase our production again. In any case, it will be a slow process, because to attract investment feedstock needs to increase first. Mexico used to produce 3.5 million barrels of oil per day (b/d) but now production is below 2 million b/d, and less gas is being produced. The country has not invested in shale gas even though it has the same shale formation as Texas. Once there is more oil and gas production, private players will be willing to invest in refurbishment of refineries. Braskem Idesa made a huge investment but now there is not enough ethane for Pemex to produce more ethylene. Some companies are operating at 50% capacity because there is not enough ethylene oxide. This is why Pemex for the very first time started importing ethane earlier this year.

Will Unigel consider importing propylene from the United States?

This could happen given the United States is long on propylene as they are investing into dehydrating propane, not just producing propylene from crackers. They are injecting US\$60 billion per year into different chemical projects, whilst Mexico is shutting down plants.

As well as in Mexico, Unigel is analyzing ways it could produce MMA in the United States. It is a pity as Mexico could have become a great petrochemical nation. Due to the reforms, there are plans to refurbish the ethane crackers to crack liquid propane. This could improve the situation somewhat but there is a limit before a huge refurbishment is required.

How important is the sodium cyanide business in Mexico?

In 2017, the price of MMA increased dramatically but the price of sodium cyanide decreased due to imports from China and South Korea so margins went down, even though the gold and silver industry is doing well. The good thing about Unigel is we are flexible: we can use HCN to make either product.

What are Unigel's key differentiators in the Mexican market?

In terms of upstream, we can buy natural gas and ammonia, the main raw materials for HCN, at US prices which are very competitive due to shale gas. In Brazil we can also produce HCN and acrylonitrile at a competitive cost because we have a good supply agreement for propylene. Regarding downstream, Plastiglas is the leading producer in the Americas of cell-cast acrylic sheets.

Where will Unigel target growth in 2018?

We will install our plant to produce HCN, and dismantle an acetone cyanohydrin (ACH) plant that we own to install it in Mexico or on the US Gulf coast to produce MMA. This is for internal use and for sale to the paint industry in Mexico and the United States. We will also produce acrylic sheets of up to 100mm thickness and more impact resistant sheets without compromising on transparency. Currently, we produce 16,000 mt/y of sheets but want to produce 20,000 mt/y sheets in the next few years. ■

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forward. We work very closely with Pemex and are very confident in their ability," remarked Lepecki.

Etileno XXI is also significant because it has showed what Mexico is capable of and put it on the map in terms of petrochemicals production. In the early 2000s, the government decided it wanted to develop the industry again and reduce the trade deficit. This, along with the efforts of Braskem and Idesa and financing by development banks such as the IFC, was crucial to the development of the Etileno XXI project.

There are hopes the project will now spur more development further down the supply chain. "The investment is very important because it sets a precedent that, as an industry, we have not had for the last 25 years. It has precipitated the opening of new projects and generated the conditions for long-term contracts in the industry," comments Miguel Benedetto, general director, Mexican Chemical Industry Association (ANIQ).

Still not enough

Mexican petrochemical production has declined significantly in recent years. According to information compiled by ANIQ, production volumes fell from around 11.21 million mt/y in 2013 to 8.47 million mt/y in 2016, only to experience very moderate growth in 2017 (8.66 million mt/y). By comparison, imports of petrochemical products to Mexico have been growing relentlessly, from 5.82 million mt/y in 2013 to 7.41 million mt/y in 2017. Exports of petrochemical products were 1.5 million mt/y in 2017, leaving the apparent national consumption figure at 14.57 million mt/y. The United States represented 62.8% of the petrochemical imports, but was the recipient of only 38.4% of Mexico's exports.

A large part of the problem lies in Pemex's decreasing production rates of basic petrochemicals and declining refining capacity. The state company's total ethylene production pretty much halved in the five years between 2012 and 2017, going from 1.13 million mt/y to 578,700 mt/y. All of Mexico's crackers are ethane based but when the oil

price was high, Pemex decided to invest in oil rather than gas, meaning its production and refining capacity of gas has been severely limited. In fact, since 2010, Mexico's natural gas production has decreased from

about 7 billion cubic feet per day (bcfpd) to 4.8 bcfpd over the first half of 2018. This is impacting Mexico's entire chemical supply chain. "Unfortunately Pemex's refineries are not operating efficiently and probably

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PLASTIGLAS DE MEXICO S.A. DE C.V.

Plastiglas de Mexico, S. A. de C. V. was founded in 1959 with headquarters in Ocoyoacac, State of Mexico. The company since its beginning manufactured commodity acrylic sheet under the cell cast acrylic technology.

As it was expanding its market penetration, they had the need to increase production capacity. Because of this, they opened a second production plant in San Luis Potosí, SLP, Mexico.

In parallel, Plastiglas entered in the distribution business in Mexico through the opening of strategically located service centers to meet the needs of acrylic sheet and other plastic laminates in the Mexican market.

Currently, Plastiglas has the largest installed capacity in North America for the manufacture of cell cast acrylic sheet and is the leader in manufacturing and marketing of this kind of material.

In the past 25 years, Plastiglas has become a world-class manufacturer with majority of market share in Mexico, USA, Canada, Central and South America.

Plastiglas de Mexico has developed a culture of total orientation to understand and meet the requirements of its customers.

Supported by the system ISO 9000, the company lives the orientation to attend customer needs, from senior management to all the levels of the organization.

Plastiglas has differentiated itself from its competitors through the quality of its products and the excellence in the service. Plastiglas currently offers the widest range of cell cast acrylic products in North America.

With more than 20 categories of products, Plastiglas participates actively in market segments where the quality and performance of the materials must be guaranteed.

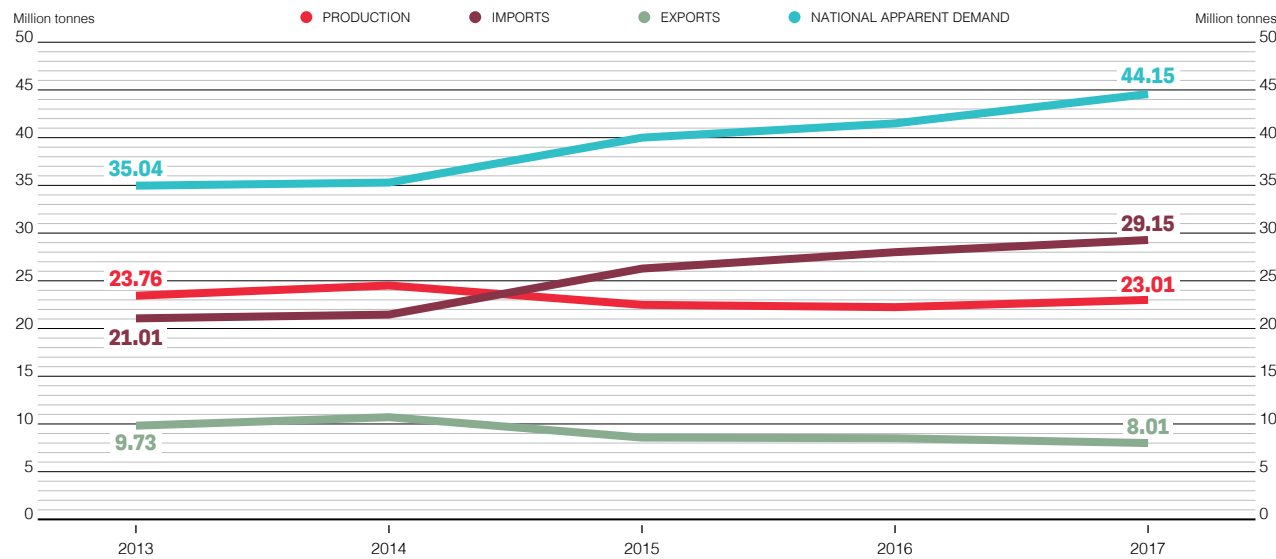
Thanks to the versatility of the company, brands like CHEMCAST GP®, CHEMCAST HIGH IMPACT®, PMG®, SENSACRYL®, NOVANITE®, STONIA®, BICOLOR®, FG® have been positioned in the most demanding segments and with the greatest range of applications: sculptures, windshields, windows, domes and skylights, interior decoration, signage, lighting, doors, kitchen counters, safety barriers, furniture, bathtubs, sinks and industrial parts.

Abraham Klip
CEO Unigel Mexico
Ph: 52 722 2796800
www.plastiglas.com.mx

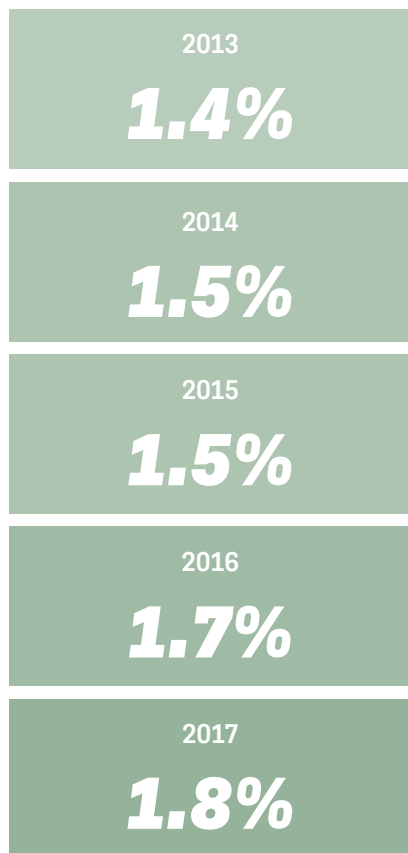
MEXICO'S CHEMICAL INDUSTRY IN FIGURES

Source: ANIQ

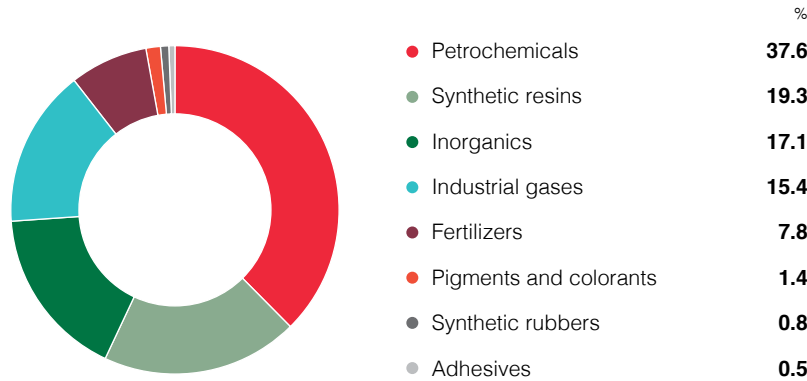
CHEMICALS PRODUCTION AND TRADE



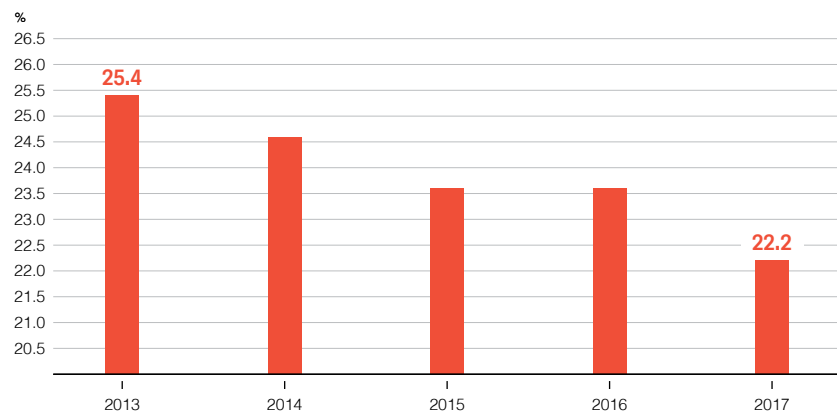
PARTICIPATION OF THE CHEMICAL INDUSTRY IN THE GDP



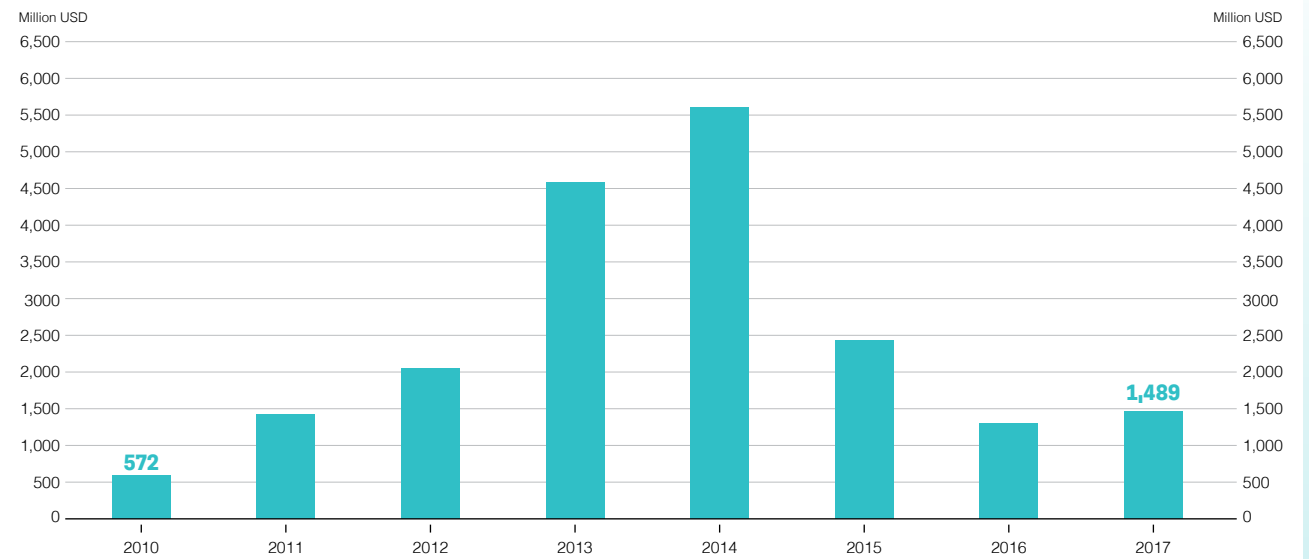
CHEMICAL PRODUCTION: BREAKDOWN



CHEMICAL INDUSTRY IDLE CAPACITY (%)



INDUSTRY INVESTMENT



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only at 30% capacity, so there is not enough propylene available. Indeed, Mexico imports 70% of its gasoline needs. Therefore, we stopped our partnership with Pemex and now import methyl methacrylate (MMA) from Brazil,” said Abraham Klip Moshinsky, general director of Unigel Mexico, which used to produce MMA in Mexico. Furthermore, companies that rely on ethylene oxide have suffered as a result of Pemex’s reduced output, volumes of which fell from 345,400 tonnes in 2012 to 218,500 in 2017. “Some companies are operating at 50% capacity because there is not enough ethylene oxide,” continued Moshinsky. More downstream, speciality chemical producers are holding off investment due to the lack of certain petrochemicals products. Pemex, still the giant of Mexico’s energy sector, continues to produce less oil and gas, meaning a severe lack of domestic feedstock. Nor has Mexico seriously sought to develop its shale gas potential, even though Mexico shares the Eagle Ford basin with Texas where there have been prolific results. “Mexico used to produce 3.5 million barrels per day (mbpd) of oil but now it is below 2 mbpd, and less gas is being produced. The country has not invested in

shale gas even though it has the same shale formation as in Texas; the government needs to incentivize exploitation of this,” laments Moshinsky.

The revolution will be here shortly

With Pemex stumbling, it is in this context that the Peña Nieto administration launched the ambitious energy reform in 2013. Whilst this has great potential to improve Mexico’s supply of feedstock, change will happen slowly. In the most significant auction since the reform, in January 2018, Royal Dutch Shell won nine of the 29 deepwater Gulf of Mexico blocks available. Malaysia’s state oil firm Petronas also won six of the winning bids and Qatar Petroleum won five bids. Ironically, Shell produced more than 60% of Mexico’s oil production before all foreign assets were expropriated in 1938 and Pemex was formed.

While other auctions have also resulted in investment promises from the winning companies, the government estimates that up to US\$600 billion is needed to bring Mexico back to record production levels reached in 2004 (3.38 million barrels per

day), a goal that, at today’s 1.88 million barrels per day (2018 H1), is still far away. According to Moshinsky: “Once there is more oil and gas production, private players will be willing to invest in refurbishment of refineries.”

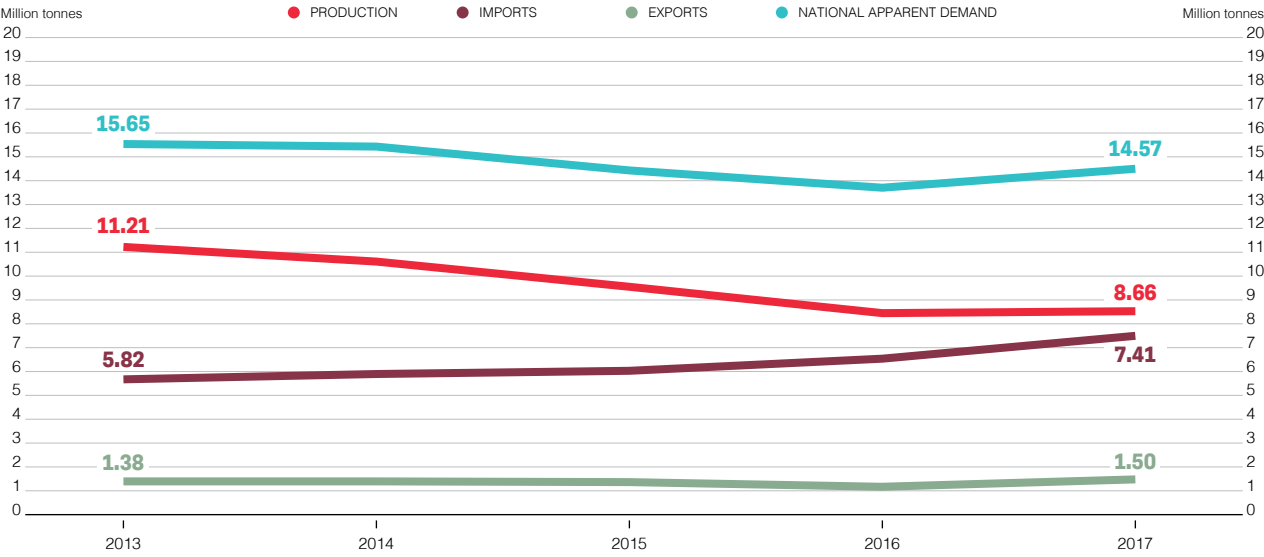
But production will take a while to materialize, given that first production at the most recent auctioned blocs is not expected before 2028. Whilst some production will come sooner, it will not be enough to change the dynamics of domestically produced feedstock in Mexico.

To plug the void in refining capacity, in a symbolic move, for the first time in its history Pemex started importing ethane from abroad earlier this year. This is especially important for Pemex given it has a 20 year contract to supply Braskem Idesa with 68,000 tonnes of ethane and it also has to supply its two ethylene plants at the Canigrejera and Morelos complexes on the Gulf of Mexico. Until oil and gas production increases in Mexico, Pemex’s imports are likely to portend the next few years. “The priority now is to see how we can speed up the reform and how to have a transition period before new companies emerge,” said Benedetto of ANIQ. ■

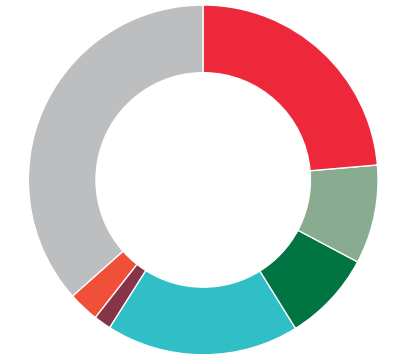
MEXICO'S PETROCHEMICAL INDUSTRY IN FIGURES

Source: ANIQ

PETROCHEMICALS PRODUCTION AND TRADE



MEXICO'S PETROCHEMICAL PRODUCTION PER SEGMENT (2017)



Ethane	2,049.5
Ethane derivatives	797.2
Basic petrochemicals	721.3
Methane derivatives	1,542.6
Aromatics and derivatives	154.8
Propylene and derivatives	232.2
Other	2.2
Private companies production	3,157.0

PETROCHEMICALS PRODUCTION AND TRADE (THOUSAND TONNES)

	2013	2014	2015	2016	2017	2017 apparent national consumption
Ethane	2,264.3	2,293.6	2,235.0	1,806.6	2,049.5	2,075
Acrylonitrile	35.2	44.2	46.6	26.2	0.0	81.2
Ammonia	921.6	869.1	575.5	532.8	499.7	858.7
Vinyl chloride	101.0	176.4	162.4	60.0	0.0	601.7
Styrene	81.1	122.1	100.8	31.9	0.0	698.2
Ethylene	1,033.7	987.7	916.6	758.0	1,508.9	1,514.5
Ethylene oxide	366.5	350.7	337.7	293.7	218.5	218.6
Propylene	419.1	470.8	454.6	346.8	230.0	499.8
Toluene	122.0	144.5	117.1	87.3	53.0	96.7
Xylenes	83.5	109.7	84.9	98.2	59.1	63.9
Ethylene glycols	281.6	266.2	265.9	227.1	136.9	444.4
Bencene	75.8	117.9	83.2	47.2	19.1	2.1
Ethyl acetate	139.0	149.3	166.6	153.7	140.8	19.4
Terephtalic acid	1,545.4	1,555.4	1,569.4	1,566.4	1,554.6	934.1
Acetic anhydride	81.8	91.1	83.2	64.5	60.2	-2.1
Phtalic anhydride	50.9	52.0	51.5	30.0	31.7	20
Caprolactam	70.1	66.5	68.3	62.6	70.6	14.9
Ethanolamines	43.5	45.2	44.0	45.0	45.0	30.2

PRODUCTION DEFICIT

PRODUCTION SURPLUS



Jorge D. Saldaña

Chief Strategy Officer (CSO)
WYN DE MEXICO

Out of the ten most important raw materials we purchase, four were supplied by Pemex, but now we do not buy anything from Pemex. This is because the plants that used to produce these materials have stopped operating; for example, the styrene plant.

What has changed at Wyn de Mexico and in the paints and coatings market in Mexico since 2015?

From 2015 to this date, the main shifts in the coatings market have been the country's energy reform and the transformation of Comex into a PPG Company. Regarding the energy reform, opportunities for the development of new suppliers of petrochemicals throughout the globe have arisen. Wyn has been developing suppliers from countries like China, Russia, Singapore and South Korea. This has marked a huge difference from three years ago where almost all our raw materials came from the United States and the rest were produced in Mexico. We now work directly with suppliers in China to import acrylic monomers and vinyl acetate, and with suppliers in South Korea and Russia to import some other materials. This goes together with our strategic vision to develop a global supply chain.

Why have you diversified your supplier base to include Asia?

Due to the energy reform we have seen a lot of transformations in the market, mainly with Pemex. Out of the ten most important raw materials we purchase, four were supplied by Pemex, but now we do not buy anything from Pemex. This is because the plants that used to produce these materials have stopped operating; for example, the styrene plant. We also used to purchase acrylonitrile and methyl methacrylate which were produced by Mexican companies, but now we buy it all from distributors that bring the materials from the US. Another example is with ethoxylated surfactants, which have been short in terms of availability due to the irregular production of ethylene oxide in Mexico.

What are the main drivers of the paints and coatings market?

Government expenditure is a key driver for the paint industry demand. PPG has also been pushing new technologies such as 100% acrylic paints, which are more weather resistant, more washable, and develop better adhesion to different substrates, as opposed to vinyl acrylic paint, which is actually the market leader. We

have also moved along this path. Market growth has been moderate and we do not expect a peak in 2018.

Are the automotive and aerospace industries driving increased quality in the industry?

For solvent-based paints these industries are definitely an important driver in terms of increased quality. In Mexico, we produce water-based resins which are still a small portion of the automotive and aerospace coatings' market, so we have not been strongly affected by these industries. However, we are working on some water-based materials for automotive applications, since we believe that it could be a key driver in a near future.

Is there anything that would prevent Wyn from expanding its manufacturing footprint in Mexico?

Legally speaking, there are no limitations; we know there is a lot of space in the market to continue growing and we have the possibility to expand our plant if necessary. However, the decrease in margins because of higher prices in raw materials (mainly monomers) due to operating problems caused by extended maintenances and natural events such as hurricanes in the US Gulf Coast region, has slowed down investments in our industry. Also, energy and transportation costs have increased by 40%, which strongly challenge the competitive position of Mexican companies. Finally, the petrochemical industry normally behaves in a cyclical way but these cycles have been becoming shorter recently, making our business more vulnerable.

How do you plan to differentiate Wyn and grow across Latin America going forward?

Wyn has been exporting for about 30 years and our products and quality speak for themselves. We always try to give a very personalized and technical service to each customer, since multinational companies are not able to do this because of their size. We are also pushing for more legal standards to improve the quality and environmental requirements for paints and coatings.



Jesús García Said

CEO
**INDUSTRIA QUÍMICA DEL
ISTMO (IQUISA)**

The industry has been handled with a differentiation between basic and secondary petrochemicals, preventing the private sector from producing most of the items under the basic category. In my opinion, the petrochemical industry is just one.

What is IQUISA's scope within the chemical industry?

We produce chlorine and caustic soda, as well as chemical specialties such as hydrochloric acid, sodium hypochlorite, caustic soda flakes and packed chlorine. Our products are used by many different sectors including the chemical industry, water treatment, soaps and detergents, bleaches, mining, beverages, textiles, pigments, paper, alumina and many others. Chlorine is mainly used in water treatment, and has some important industrial applications. IQUISA has five plant facilities strategically located throughout the Mexican Republic; three of our plants (IQUISA Coatzacoalcos in Veracruz state, IQUISA Noreste in Nuevo León state and IQUISA Santa Clara in the state of México) produce chlorine, caustic soda and the mentioned specialties. The other two plants (Tlaxcala and Hermosillo) produce just specialties: sodium hypochlorite and packed chlorine.

What are the market dynamics in Mexico and also for exports?

We export some chlorine and caustic soda flakes to Central America: Guatemala, El Salvador, Honduras and Costa Rica. The caustic soda flakes are also exported to the United States, especially to southern Texas. In Mexico, the demand for chlorine is met by the offer, so it is a balanced market. In the case of caustic soda, there is a shortage – Mexico imports around 250,000 tonnes annually, mainly from the United States. Talking about our production technology, we have 50% of our chlorine and caustic soda production capacity with the most modern membrane technology, and the other 50% uses mercury technology. In both cases, the caustic soda obtained is of high purity, therefore we are very competitive against the imported standard caustic soda.

Risks are high in the chemical industry. What is your approach towards safety?

Safety is a key element for us. As an example of that, we are very proud of our safety results at IQUISA Santa Clara plant, which has not had any disabling accident for 14 years, and our Tlaxcala plant has not had disabling accidents for 13 years. We have been recognized for more than 10 consecutive years in all of our plants by the Chlorine Institute from the US for having safe

operations without accidents and without any chlorine emissions. We also are certified in all our plants under the protocols for Responsible Care, as part of ANIQ.

What are the next investments in the pipeline for IQUISA?

We have a modernization plan of our plant in Coatzacoalcos, with the installation of the latest technology, but that is still under evaluation.

How important is it for Mexico to have free trade agreements with many countries?

Talking of Mexican exports in general, it is very important because Mexican products are very competitive. Having free trade agreements with many countries gives us the opportunity to go to other markets and reduce our dependence on exports to the US. Also, selling to other markets we could obtain better margins for our exports.

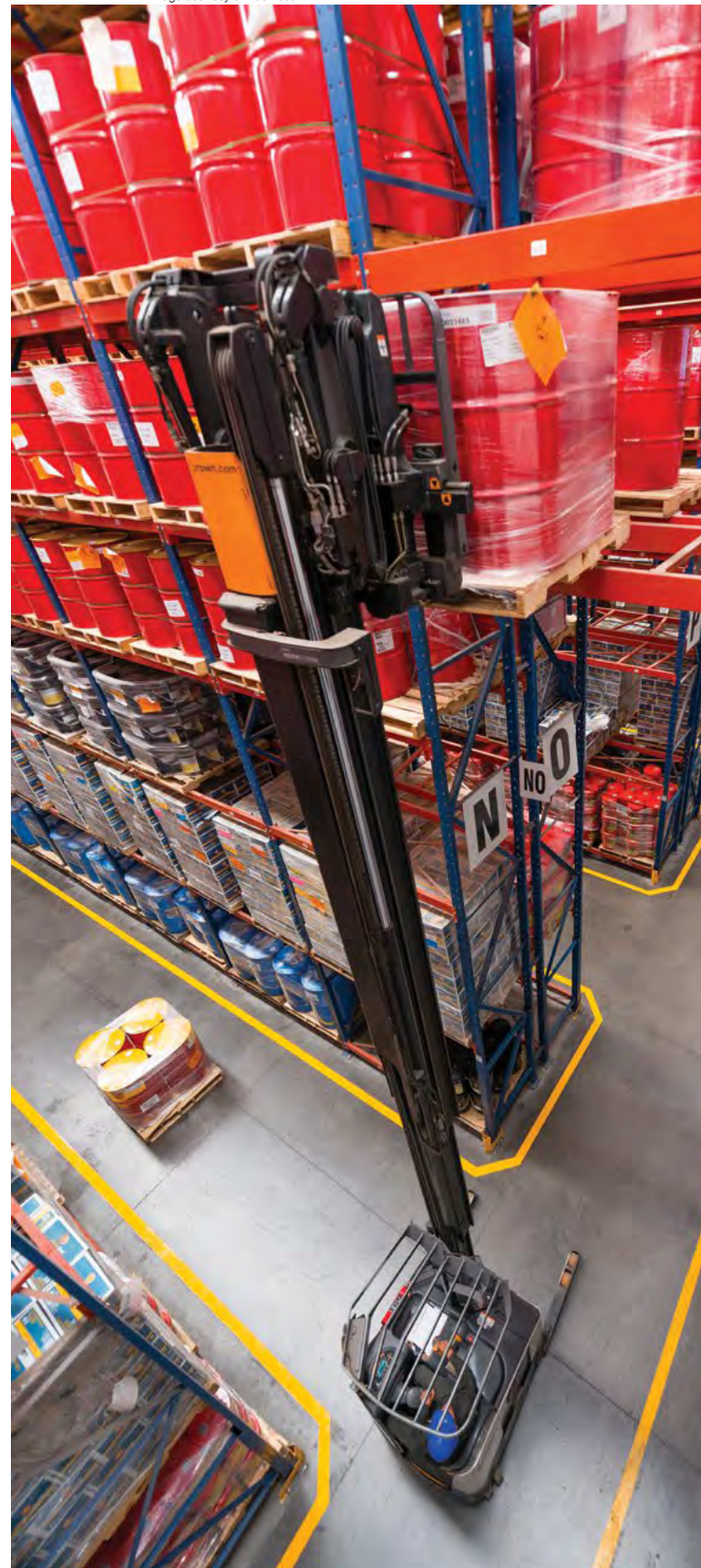
What would you say is the main challenge for Mexico's chemical industry?

The petrochemical industry in Mexico has been handled with a differentiation between basic and secondary petrochemicals, which does not allow the private sector to produce most of the items under the basic petrochemicals category. In my opinion, the petrochemical industry is just one. Also, the petrochemical industry has been the exclusive responsibility of the State, but now, with the energy reform, new opportunities are opening up for private companies to produce and supply the petrochemicals that today are only supplied by Pemex.

How was the election of AMLO received by the industry?

We have to wait until the new government is in place. During the campaign, there were many statements by Morena party members that worried the industry, but now we can see that the new government is showing its willingness to team up with the industry to promote economic growth. The Mexican economy offers good opportunity with several growing sectors. Experts anticipate economic growth will improve to 3 to 4% annually – the country would need higher sustained growth of 5% to 7% per year, but 3% or 4% will at least be better than the average 2% of the last years. ■

Image courtesy of Pochteca



Specialty Chemicals

Towards more value-added solutions

Being Latin America's second largest economy and having a very sizeable industrial base, Mexico offers a great platform for companies to continue growing in specialty products that provide not only higher-margins but also more stable revenue streams that go beyond one-off spot trades. While companies focusing on specialties need to invest more time and resources to establish relationships with clients than if they were selling bulk chemicals, once that step is achieved, those commercial relationships tend to be long term.

But first, what exactly is a specialty chemical? Different companies use the term in a variety of ways. "Generally, specialties are sold, commodities are bought," summarized Johnny Silva, managing director of Disan Mexico, a distributor. For Eugenio Gerardo Manzano Alba, executive director of Pochteca, a Mexican distributor with a regional footprint: "What constitutes a specialty chemical is contested. Some say that specialty products are those that are bought for their specific functionality; others think that specialties are products that cost more than US\$3 per kilo. The first is a better definition, which means every sale based on the product's functionality can be classified as a specialty, even some basic solvents or inorganic chemicals."

What is clear is Mexico's potential as a growing market for specialty products, as illustrated by the world's largest specialty chemicals player – Martin Toscano, president of Evonik Industrias de México, provided an overview of the main sectors of interest for the company: "Evonik actively participates in many significant industries in Mexico such as mining, automotive, coatings and animal proteins, and sees a growing opportunity in many others, such as health, personal and household care, aerospace, and oil and gas."

Meanwhile, Eduardo Denyer Angel, president for Latin America North at Brenntag, a global chemical distribution company, relat-

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Martin Toscano

President
EVONIK INDUSTRIES DE MEXICO

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In the discussions to upgrade trade agreements with South America and the European Union, as well as in the Trans Pacific Partnership, chemicals play a big role. The agreements will reinforce the investment flow into Mexico and will complement the positive effects of the energy reform eventually.

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■ **Evonik is celebrating 50 years in Mexico. Could you give us an overview of its capabilities and product portfolio in the country?**

Evonik Industries is very well represented in Mexico with more than 20 business lines operating in the country. We operate three business segments globally, which are Nutrition and Care, Performance Materials and Resource Efficiency. Regarding manufacturing capabilities in Mexico, for more than a year now, we have been operating a sodium cyanide plant in Coatzacoalcos for the gold and mining industries in a joint venture between CyPlus, a wholly owned subsidiary of Evonik, and Mexican Grupo Idesa.

How important is Mexico to Evonik?

Evonik actively participates in many significant industries in Mexico such as mining, automotive, coatings and animal proteins, and sees a growing opportunity with many others, such as health, personal and household care, aerospace, and oil and gas. We are currently integrating business units of acquisitions we made in the US market, such as the performance materials division of Air Products and part of the silica business unit of J.M. Huber.

Due to these factors and organic growth, we see a unique opportunity in Mexico and double-digit growth in the next two to three years. The integration of the Air Products acquisition, for example, will bring significant growth to our comfort and insulation business line, including for our polyurethanes business with many players in the automotive industry. We have also announced the expansion of our molding compounds plant in Arkansas to serve the growing automotive industry in Mexico. Right now, we only produce sodium cyanide in Mexico, but this is just a first step.

What will be the impact of current trade negotiations?

With Mexico's 45 trade agreements with countries worldwide, the country is very well positioned for the future. Regarding NAFTA, my personal opinion is that the outcome will be similar to what is in place now, but we will probably miss the chance to upgrade the agreement. Evonik has more than 30 manufacturing sites in the United States so our Mexican business benefits

from NAFTA greatly. In the discussions to upgrade trade agreements with South America and the European Union, as well as in the Trans Pacific Partnership, chemicals play a big role. The agreements will reinforce the investment flow into Mexico and will complement the positive effects of the energy reform eventually.

What would hold Evonik back from expanding its manufacturing footprint in Mexico?

There are no major challenges to this. We are in a good position in Mexico, due to the proximity to our US factories and we are focusing on optimizing logistics and the whole supply chain from USA to Mexico. Our production footprint in Europe also enables us to be very competitive in Mexico. We are also currently focusing on integrating our acquisitions into our Mexican business platform. In the future, if we really go for a local manufacturing site in Mexico, we would need to find the right product to bring to the country in terms of local availability of raw materials and infrastructure and technology, as well as a suitable market.

Can you give examples of how your products help clients become more sustainable?

Many of our business lines have been focusing on this. For example, our silica products support the concept of green tires, which reduce fuel consumption significantly. We just launched a joint venture with DSM for the production of omega-3 fatty acids for the salmon and pet food industries. This is a breakthrough for animal nutrition because, for the first time, it will enable production without using fish oil that puts a strain on the oceans' resources.

What lies ahead for Evonik in Mexico in 2018?

In 2017, we achieved more than 20% growth in volumes and above 15% in turnover. Many of our global key accounts are here already or coming to Mexico, and we see outstanding growth rates and expansion by our local key accounts as well, especially the ones connected to export markets. We expect consistent growth in the next two years – we must do our homework to absorb and capitalize on this growth. It is a good challenge to have! ■

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ed: “Specialty chemicals in Mexico represent a significant part of our business. Our customers are demanding more specialized chemicals and services to make higher quality products for export markets.” In principle, this picture bodes well with potential expansion of local capacity by producers. Brazilian multinational Oxiten, for instance, invested US\$20 million in its Coatzacoalcos unit in 2015 to expand plant capacity to 30,000 tonnes per year (mt/y). Gerson Moacir Secomandi, commercial director of Oxiten Mexico, gave more details: “Since 2003, with the acquisition of the Canamex unit, Oxiten has continued its development plan in the region focused on filling the needs of its customers, expanding through acquisitions and modernizing and enlarging its production units. The Coatzacoalcos expansion allowed Oxiten to increase its line of specialties, diversifying the variety of products and solutions offered to local customers, as well as opening other export opportunities.”

Feedstock supply is a key limitation for companies to continue growing, however. Evonik, for example, lists availability of raw material as a constraint on expanding its manufacturing footprint in Mexico. “We will see what happens with the implementation of the energy reform but at the moment there are certain derivatives from petrochemicals which there are not enough of or the supply is not consistent or competitive,” said Martin Toscano.

Sharing a similar view, Rafael Méndez, regional director for Latin America's Northern Tier at Croda, another specialty chemical producer, affirmed: “Unfortunately, there was a lack of investment years ago in the petrochemical industry and the oil and gas business. If Mexico continues on the right path [with the energy reform] it will take five to ten years to be at a level where international investors are ready to invest more in the petrochemical industry.” Croda entered Mexico in 2006 through the acquisition of Uniqema. Méndez points out that the company would need more ethane to manufacture locally, considering that some of Croda's chemistry is based on ethoxylates. However, he also says that Croda is embarking on a “step-change” whereby the company is focusing all of its investments on green technologies. As an exam-

ple, in 2017, Croda started operating a plant in the United States that produces ethoxylates from alcohol made from corn. Moving forward, Mexico will always be in the spotlight for the main international specialty chemical players. Gerson Moacir Secomandi of Oxiten concluded: “Mexi-

co has great potential and has been identified as an emerging nation with promising economic prospects in the next 20 years. The country has abundant raw materials, such as natural gas, oil and derivatives; resources that attract the attention of several domestic and international investors.” ■

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Gerson Moacir Secomandi

Commercial Director
OXITENO MEXICO

What have Oxiteno's main achievements been in Mexico since 2014?

Since 2003, with the acquisition of the Canamex Unit, Oxiteno has continued its development plan in the region focused on filling the needs of its customers, expanding through acquisitions and modernizing and enlarging its production units. In 2015, Oxiteno invested US\$20 million in its Coatzacoalcos unit, expanding its productive capacity by 30,000 mt/y. This expansion allowed Oxiteno to increase its line of specialties, diversifying the variety of products and solutions offered to local customers, as well as opening other export opportunities.

Oxiteno continues to modernize to meet the most challenging demands of our customers and markets, corresponding to the most diverse certifications, and to verify the quality of its products. In addition, we would like to highlight Oxiteno's certificate for the *Responsabilidad Integral* program awarded by ANIQ in 2015 and 2017. In 2017, Oxiteno Mexico was also recognized by 'Great Place to Work' as one of the best companies to work at.

How will the new alkoxylation plant in Pasadena, Texas, impact Oxiteno's business in North America?

This movement consolidates Oxiteno's position as the largest ethoxylator in the Americas and the only one with continent-wide coverage. Oxiteno has strengthened its performance in the region through the expansion of its commercial and technical structure, opening a commercial office in Houston and, in partnership with the University of Southern Mississippi, installing an R&D laboratory on the Hattiesburg campus.

What are the benefits of the partnership between Oxiteno and the Mexican Petroleum Institute?

The purpose of this collaboration is the exchange of technological knowledge, focused on the development and modernization of solutions for the oil sector.

Do you see major challenges in the supply of raw materials in Mexico?

Mexico has great potential and has been identified as an emerging nation with promising economic prospects in the next 20 years. The country has abundant raw materials, such as natural gas, oil and derivatives; resources that attract the attention of several domestic and international investors.

Additionally, we consider not only Mexico's potential and abundance of resources but also its strategic geographic position. We would also highlight that Mexico is one of the leading countries in bilateral trade agreements in various regions of the world. This not only provides sales opportunities for its products but also for the acquisition of raw materials from other countries.

What will be the impact of the energy reform on the petrochemical industry?

The main objective of the energy reform is to increase investment by domestic and international companies in Mexico. This can lead to the creation of new companies with their own investment programs or associations with PEMEX (for example, joint ventures). These factors open the opportunity for the creation of new jobs and the integration of productive chains, which should increase the share held by petrochemical and chemical industries above their current 2% of GDP.

What are the future prospects for the chemical industry in Mexico?

The chemical industry employs more than 150,000 people. According to ANIQ, the sector ended 2017 with US\$4 billion in investments made, mainly in operational improvement projects. With the energy reform and the evolution of NAFTA, the industry could have an even greater share of Mexico's GDP. ■

The US\$20 million Coatzacoalcos expansion to 30,000 mt/y in 2015 allowed Oxiteno to increase its line of specialties offered to local customers, and it also opened other export opportunities.



Rafael Méndez

Regional Director,
Latin America Northern Tier
CRODA

How important is the Mexican market to Croda?

Globally Mexico is the 11th biggest economy in the world and it has an important chemical market. It represents the second biggest country for us in Latin America; out of all the countries Croda does business in from Mexico down to Ecuador, half of our revenues come from Mexico. Croda's operations began in Mexico with its acquisition of Uniqema in 2006, and from this it started to develop the market directly, whereas before the company used a distributor.

We have an application laboratory which complements our main innovation facilities for Latin America in Brazil, where we recently made a significant investment. In Mexico our lab is 100% focused on personal care. 80% of our work is related to creating innovative formulas for our customers' final products. Last year, we invested in claims substantiation equipment which helps to prove defects in the final formula of a specific application.

Mexico has one of the largest personal care markets in the world but per capita consumption in this area is comparatively low. How big is the opportunity for growth?

Mexico is very important from a manufacturing perspective and will soon become the fifth biggest personal care manufacturer in the world, thanks in large part to NAFTA. Compared to Brazil, which is the world's top consumer of hair products, Mexico has a much lower consumption level but it is increasing rapidly. Our expectations about the internal market are also positive because due to the energy reform the consumption level will improve. In general it will bring a lot of investment to Mexico in the oil and gas business which will create new jobs and reinforce Mexico's economy. Additionally, Mexico has become an important automotive country and this trend will continue. We see a growing middle class in Mexico which means we are positive about future growth.

Does a lack of raw materials in Mexico hold Croda back from manufacturing in Mexico?

Unfortunately there was a lack of investment years ago in the petrochemical indus-

try and the oil and gas business. Therefore, gas production has decreased and some raw materials like ethane are less available. That is impacting the whole petrochemical industry. We believe through the energy reform the country is trying to get back on track with regards to increased oil and gas production, but this will take some time. If Mexico continues on the right path it will take five to ten years to be at a level where international investors are ready to invest more in the petrochemical industry.

We would need more ethane to manufacture here given some of our chemistry is based on ethoxylates. However, Croda is embarking on a step-change whereby we focus all of our investments on green technologies. For example, in December 2017 we started operating a plant in the United States that produces ethoxylates from alcohol made from corn. It is the first site of its kind in the Americas.

How innovative is the specialty chemical industry in Mexico?

Mexico is not particularly innovative in terms of new ingredients but there is a lot of innovation in the development of applications for final products. As an example, Mexico is unique in being the top consumer of hair gels and Croda has created different formulas in its Mexican lab for this market. Mexico and Brazil are also the main countries where big personal care companies like Procter & Gamble and Unilever launch their new products in Latin America.

How will Croda capture growth in northern Latin America in 2018?

Personal care will be a big focus, given that Mexico is becoming more important in this market and we will increase our capabilities to serve it. The other two big priorities for us are serving the expanded oil and gas market, for which we have very good technology for oilfield production, and capitalizing on the development of the automotive industry via our focus on polymer additives. The business trends are positive for Mexico; the only threats are external and internal politics. However, overall we are optimistic about the outcome of the NAFTA negotiations even if trade is restricted; whilst we will lose some competitiveness, the industry is prepared for this worst-case scenario. ■



Chemical Distribution

"Distributors in Latin America have typically been local and family owned, but this is changing. Distribution requires investment and working capital which makes it more difficult for smaller players to compete with international players. This situation is driving the need for consolidation."

- Eduardo Denyer Angel,
president,
Brenntag Latin America North

Welcome to the Party

The market offers excellent upside potential for chemical distributors

If the situation for Mexico's petrochemical industry is not exactly rosy, the same cannot be said for the chemical distribution market. Although Mexican production of petrochemicals has been declining, consumption of chemicals is relatively buoyant. Miguel Benedetto Alexanderson, general director of the Mexican Chemical Industry Association (ANIQ), said: "For the last 15 years, the chemical distribution market has been growing at twice the rate of GDP, so around 5% per year. We expect growth of twice the GDP rate in the next ten years."

The comparison between volume and value of sales of chemicals is revealing: while the value of sales in Mexico actually fell significantly from US\$37.1 billion in 2013 to US\$35.5 billion in 2016, the picture changed for the better last year, with sales amounting to US\$39.1 billion, according to ANIQ figures. Johnny Silva, managing director of distributors Disan Mexico, gave

more details: "Over the last decade chemical prices went down and it was a buyer's market. However, over the last nine months, the whole chemical market changed and it is the other way around. Now, strategic buyers want to talk with us about availability and security of supply."

Mirroring a trend happening across Latin America, another major transformation currently underway is that of consolidation as Mexico's chemical distribution market attracts the attention of international players. Some notable examples include Texas-based Nexeo Solutions' acquisition of local player Ultra Chem in 2017, GTM's entering into the market with its purchase of High Chem Specialties México in 2016, and Brenntag's acquisition of Amco International in 2012. "The participation of distributors is less in Mexico compared with the United States or Europe so we have been trying to encourage more distributors

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José M. Berges

CEO
GTM

GTM is the second largest distributor in Latin America. How did it reach this position?

The company started in the 1980s in Central America and mostly grew organically. This changed dramatically in 2014, when Advent International, one of the largest private equity funds in the world, took a majority position in the company. Immediately after this we looked for acquisitions. In 2016, we bought High Chem Specialties México which, as well as giving us a position in Mexico, provided us our first portfolio in specialties. A week later, we purchased Peruquimicos, the main chemical distributor in Peru. We then acquired Brazilian company quantiQ in April 2017, which was a transformational move. From 2016 to 2017 we almost tripled our sales due to these acquisitions.

What is the extent of GTM's Mexico presence and how confident are you in the country's future?

Before we acquired High Chem, our GTM legacy business was highly focused on oil and gas and also some industrial chemicals such as caustic soda and chlorine derivatives. We still have this focus and have combined it with the specialty capabilities of High Chem. We are present in all the main industries including coatings, adhesives, construction, personal care and general industry. Regionally, we have warehousing capabilities in Tijuana, Monterrey, Guadalajara, Villahermosa and Mexico City. We have application labs for all the industries we cover. In addition, we have five labs in Brazil and we are moving from the concept of having labs in different countries to having technical competence centers which solve not just particular problems in their country but serve the whole region.

There have been some dark clouds forming around NAFTA but this is unlikely to affect the chemicals industry greatly. The American and Mexican industries are closely entwined. Mexico imports more chemicals from the United States than it exports and this will continue. In the long term, we firmly believe in Mexico because the fundamentals are right: talented people, a lot of raw materials and proximity to the largest chemicals market globally.

Does GTM serve the mining and oil and gas industries in Mexico?

We serve both. The mining industry is extremely interesting and we are putting a lot of focus on it. Recently, we secured a strategic partnership with Chemours for the distribution of sodium cyanide for gold and silver extraction all over the region. Chemours will open a plant for sodium cyanide at the end of 2018, and this will be a major focus for GTM. Unfortunately, sales for oil and gas have suffered over the last few years, but we see signs of recovery now.

Do you see consolidation among Latin American distributors continuing?

The top three in the United States have 40% market share but the top 20 in Latin America do not hold more than 10%. Also, there are 2,500 distributors in Brazil, so there is definitely room for consolidation, including in Mexico, where acquisitions will continue.

What are GTM's key differentiators?

Our regional coverage and customer intimacy are key differentiators. Most of our client relationships in Mexico have been going for over ten years, so we have developed a reputation as a reliable partner that can supply its customers in good and bad times. For example, we were the only suppliers to continue serving our customers without any major interruptions during Hurricane Harvey. Due to our strong supplier relationships and buying in bulk we are able to obtain good rates. We also have a much better logistics system than most of our competitors and even some producers.

Is part of GTM's strategy to move more into specialty chemicals?

We firmly believe in the need to have a balanced portfolio. We want more pronounced growth in specialties but we will never move away from the industrials business. Customers always use a combination of both and this is exactly what we want to provide. The participation rate in distribution is increasing as producers find it harder to serve the needs of all customers. Also, customers realize they cannot get the same level of service from producers on application advice, logistics, credit terms and packaging. GTM will outgrow the industry, expand its position in specialties, be stronger in oil and gas and increase its sales by 50% in three years. ■

The top three distributors in the United States have 40% market share but the top 20 in Latin America do not hold more than 10%. There is definitely room for consolidation, including in Mexico, where acquisitions will continue.



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Matthias Vorbeck

General Manager
ANASTACIO OVERSEAS

Although finding sources of products and demand for them is not so difficult nowadays, the fine tuning with the suppliers is a challenge. Capturing big petrochemicals producers' interest in developing and maintaining regular sales to Latin America is not an easy task.

What led to the creation of Anastacio Overseas?

Química Anastacio is the second largest distributor in Brazil with more than 77 years in the market. Anastacio Overseas was founded in 2014. The idea was to serve multinational companies in smaller countries in Central and Latin America. The business changed in 2016, as we began trading industrial chemicals, sourcing worldwide and offering logistics and financing to clients in the region. By 2017, we added a human nutrition business unit, as well as a micro nutrition and special fertilizers unit.

Química Anastacio has a huge number of approved suppliers all around the world which have been available for Brazilian customers. Now we can offer our customers the whole package; those who are interested in local stocks and full service, including releasing in port, warehousing and local invoicing, prefer to be served by Química Anastacio. Customers who want to do their own import process and use their own tax benefits, but are interested in financing and international logistics with our same high-quality service, can go for Anastacio Overseas.

Where is Anastacio Overseas seeing most demand for its services geographically?

From 2013 to the end of 2015, Brazil was the main driver for Latin America. Previously Brazil represented 65% to 70% of our turnover, now it is 15% to 20%. Countries like Paraguay, Ecuador, Colombia and Argentina are becoming more important. All countries have a demand for chemicals, both related to human nutrition and fertilizers.

How will the dramatic increase in production in the United States affect Mexico and Latin America?

Mexico's chemical industry has been a cross-border business with the United States. If President Trump follows through, Mexico may become less dependent on the United States and find other suppliers. Therefore, we are considering expanding into Mexico as well because it is focusing more on imports from Europe and Asia, which will help us as a trading company.

The main effect of increased US production will be on its neighbors but everything will depend on the political situation there. If the government increases import duties on the steel or automotive industries in Asia or Europe, then those regions may increase tariffs on ethylene or other petrochemical products. Everything depends on what President Trump decides. Economic warfare

between the United States, Asia and the EU will not help anyone.

What challenges does Anastacio Overseas face to conducting trading activities in Latin America?

Financial tools are key to trade in our region and reducing the credit and default risk is a very important challenge, if not the most. Although finding sources of products and demand for them is not so difficult nowadays, the fine tuning with the suppliers is also a challenge. Capturing big petrochemicals producers' interest in developing and maintaining regular sales to Latin America is not an easy task. Finally, transforming the increasing amount of information available and all our expertise in valuable knowledge for the decision-making process of our clients and better networks for our suppliers is the key to our future growth.

What are Anastacio Overseas' key differentiators and what milestones does it hope to achieve going forward?

Our main differentiators are our logistics solutions, financing, personal relations and networks in each of our markets built over the last fifteen years. We have locals in each country who understand the local business culture. The trading business is still based on personal relationships and trust built over many years, so this is important, especially because the Latin American culture is very different to the one in Europe or the United States. We would like stable and regular business in Mexico, Central and South America and to find new brands we can represent in these markets.

How will the distribution market in Latin America change given the moves of large public companies in recent years?

The distribution market has been going through a process of increasing concentration, however there is also space for privately-held distribution houses, financially strong as the big public ones, but with a more agile decision-making process. As a family owned company, we have proven we are able to add significant value to both clients and suppliers, by offering dedicated service and reliability to the former, and full transparency and dedication to the latter. ■



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Eugenio Gerardo Manzano Alba

Executive Director
POCHTECA

Producers need stronger partners that can cover larger regions and product categories, and add value through technical sales, special packaging, blending and new products and applications. Distribution in Latin America represents an incredible opportunity.

Could you provide a brief introduction to Pochteca?

We started in 1988 as a paper distribution company and grew to roughly US\$50 million in sales by 2005. We always had the vision of becoming a distributor of industrial products beyond Mexico. As paper consumption began decreasing due to digital communications, we looked for opportunities to acquire distributors of industrial products where we could apply our core competencies in large-scale distribution.

We acquired our first chemical distributor in 2005; Grupo Dermet, one of Mexico's largest and which focused on food ingredients, solvents and inorganic chemicals. In 2008, we purchased Adydsa, a solvents and blends distributor. Then in 2010, we acquired Shell's lubricants assets in Mexico, becoming their master distributor in the country. Later in 2013, we purchased another competitor in inorganics called Mardupol, as well as Coremal in Brazil. Last year, we purchased Conjunto Lar, a specialty distributor focused on personal care and household goods based in Mexico City.

What is the extent of Pochteca's geographic and product reach?

We sell over 6,500 stock-keeping units (SKUs) to more than 18,000 industrial customers every year. We deliver in 500 different Mexican cities every month and have our own fleet of trucks in Mexico and Brazil so that we can safely transport chemicals 24/7. We have small operations in Costa Rica, Guatemala and El Salvador which are growing gradually. Brazil is significant for us and we see large opportunities for growth there. We have application labs in food, household, personal care, coatings, solvents and pigments, where we work with our customers to formulate products like sauces, dressings, beverages, architectural and industrial paints, personal care and cleaning products.

How is the company's portfolio split between specialty and industrial chemicals?

What constitutes a specialty chemical is contested. Some say that specialty products are those that are bought for their specific functionality; others think that specialties are products that cost more than US\$3 per kilo. The first is a better definition, which means every sale based on the product's functionality can be classified as a specialty, even some basic solvents or inorganic chemicals. 35% to 40% of our sales meet this definition.

What are the main industries Pochteca focuses on?

Food and feed, water treatment, household and personal care are some of the key high growth industries for us. We are investing heavily into labs and technical people to serve them. A growing middle class with more disposable income as well as the growing global requirement for food and clean water are some of the main growth drivers behind this. We also have dedicated teams to serve basic industries like automotive and general manufacturing, where there is a large demand for lubricants, metal-working fluids and other chemicals. Finally, mining and oil and gas are also significant in our portfolio.

What are Pochteca's main strengths?

Our application labs are outstanding in terms of our equipment and technical staff such as our food, coatings and lubricants specialists. Client employees also work in our labs with our technicians, which makes us extremely proud. Secondly, we have a large and diversified portfolio; none of our products (or customers) represents over 3% of our sales. Thirdly, we have extensive logistical reach across the region, which reduces costs to our customers and suppliers. For example, we can supply products for a client headquartered in Houston for offshore oilfields in Brazil and at the same time deliver for them in the Mexican Gulf coast. Fourthly, it is the quality of our HSSE standards. Pochteca is the only Mexican company certified by the National Association of Chemical Distributors under the Responsible Distribution program.

How do you intend to maintain growth going forward?

Our strategy is to grow above GDP growth, which we have consistently done, both organically and through strategic acquisitions. The distribution market in Latin America is very fragmented; in Mexico there are over 300 companies. Suppliers and customers are consolidating their distribution. Producers need stronger, value-added partners that can cover larger regions and product categories, safely deliver in an efficient way all over the region and add value through technical sales, special packaging, blending and new products and applications. Distribution in Latin America represents an incredible opportunity, with growth of 8% to 10% and consolidation will continue. ■

Image courtesy of Leschaco



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to enter the market," continued Benedetto, suggesting there is more room for consolidation.

Moreover, it is not just international players that have been driving consolidation. Pochteca has become one of the leading

chemical distributors in Latin America as a result of acquisitions with a string in Mexico, including Shell's lubricants assets in 2010, inorganics specialist Mardupol in 2013, and specialty distributor Conjunto Lar in 2017. "Distribution in Latin America

represents an incredible opportunity, with growth of 8% to 10% annually, and consolidation will continue. We are in the right region, in the right industry and in the most dynamic part of the value chain; it is a bright future," remarks Eugenio Gerardo Manzano Alba, executive director, Pochteca.

José M. Berges, CEO of GTM, elaborated on why the region represents such an outstanding opportunity for mergers and acquisitions in the distribution segment: "The top three distributors in the United States have 40% market share but the top 20 in Latin America do not hold more than 10%. Also, there are 2,500 distributors in Brazil, so there is definitely room for consolidation, including in Mexico, where acquisitions will continue."

Predictably, given declining petrochemical production in Mexico, much of the lifeblood of distributors is imports. This means ample opportunities for players from outside Mexico, as well as storage companies. José M. Berges of GTM puts it simply: "Mexico imports more chemicals from the United States than it exports and this will continue."

It is not just from the US market that Mexico sources its chemicals. Petrochem Middle East, a distribution, logistics and trading company headquartered in Dubai, is eyeing opportunity in Mexico: "Mexico imports a lot from Asia and Europe and soon the Middle East will become a key import partner, given that is now manufactures many more petrochemical products than before," said Rohan Y. Mehta, business development director, Petrochem Middle East. ■



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Carlos R. Dorticós B.

Business Director
UNIVAR



Could you give us the highlights of Univar's investments in Mexico?

Univar worldwide has grown through acquisitions. We started in Mexico with an acquisition of a local distributor in 2007, which was mainly focused on specialty chemicals for industries such as automotive, life sciences and personal care. Then, in 2013, we made the massive acquisition of Quimicompuestos, our largest ever in Latin America. We went from about 70 to 700 employees and are now the leading chemicals distributor in Mexico, particularly in solvents.

How did Quimicompuestos help you capture growth?

Solvents are used in pretty much every industry so we have gained business in oil and gas, automotive, paints and coatings, as well as expanded our portfolio. In particular, the acquisition gave us a large presence, as we gained almost 30 sites across Mexico. The acquisition also brought a lot of expertise and knowledge and good relationships with local and corporate suppliers. We gained authorizations with companies such as Phillips 66, ExxonMobil, Dow Chemical and Oxea.

What are Univar's blending and formulation capabilities?

Univar can blend and re-pack as the market needs. As the economy grows, more small and medium enterprises (SMEs) are being created which cannot so easily obtain all the materials and blends they need. They cannot, for example, buy full trucks or get to the minimum order amount a producer requires. This is where Univar can help them. We have, for example, developed new applications for organics and solvents for suppliers of the oil and gas industry.

As more companies move into specialty chemicals, how is the business model for chemical distributors evolving?

Companies need tanking and blending capabilities but these also need a significant amount of volume to be utilized, which will not come from only specialty chemicals – the more specialized a company is, the less volume they have. Therefore, distributors need to find the right balance between specialty and commodity chemicals. A lot of the traditional commodity distributors are now going after niche specialties via acquisition. Each com-

APLA 2018

APLA 2018

pany needs to decide where they can have a competitive advantage.

Regarding solvents, providers are moving away from basic solvents to those that provide more functionality. It is important for companies to really understand the end-use and the benefits of the chemicals, even if solvents are a commodity product.

The participation rate for distribution is lower in Mexico compared to the United States or Europe. What objections do distributors typically face from clients?

The key part of distribution is in value delivery, not just delivering products. Otherwise, customers would believe they can get products more cheaply directly from the source. Distributors can provide multiple shipments, consolidation of material and be a one-stop-shop. Furthermore, by being close to major end-users, distributors learn of new innovations and can help the big producers to invent new products. We are a channel to innovation and, moving forward, we need to become 'One Univar', meaning wherever we are in the world or across any business segment, clients have the same high level of satisfaction. ■

Eduardo Denyer Angel

President
BRENNTAG LATIN AMERICA NORTH



What proportion of your products do you source from the United States?

The proportion has changed over the last years, but roughly 50% to 60% comes from the United States, and 50% to 40% from domestic producers. Generally speaking, Northern Mexico sources more products from the US market, while central and southern Mexico draw on domestic producers.

Will the energy reform lead to increased demand for chemicals from the oil and gas industry?

Pemex is undergoing a transformation which is slower than initially estimated. This, in turn, has reduced the development of downstream projects. Recently, though, we have seen an increase in demand from the oil and gas industry. If the ethylene chain stabilizes, it will bring more opportunities for downstream activities. The reform will increase the participants and the activity in the upstream and downstream business.

Why are there so many distributors in Latin America and how fast is consolidation happening?

Distributors in Latin America have typically been local and family owned. A few years ago, there were no regional players but this is changing as customers are able to buy products from all over the world. At the same time, the distribution market is demanding more local efficiencies and services. Distribution requires investment and working capital which makes it more difficult for smaller players to compete with international players. This situation is driving the need for consolidation. Ultimately, this will improve the efficiency of our industry.

Will you make further acquisitions?

Most global distributors are investing to speed up consolidation and there is an opportunity for Brenntag to engage in M&A activities of mid-sized and small players. Brenntag will pursue this consolidation strategy to boost our growth plan. Most of our recent acquisitions have been of specialty chemical players and this is paying off in terms of return-on-investment and gains in market share. A case in point is food and personal care.

Brenntag has a vested interest in helping to consolidate the chemical distribution market, while entering and expanding market participation in key industries, upgrading assets and exceeding local regulations for handling chemicals. We continue to permanently look for operational excellence and efficiencies. ■

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Johnny Silva

Managing Director
DISAN MEXICO

What have been the key milestones for Disan in the last few years?

We have doubled our size over the last four years to US\$26 million and are targeting US\$32 million in 2018. Disan focuses on personal care, which is our 'bread and butter', but also household care, pharmaceuticals and the industrial market where we sell semi-commodities like glycerin, propylene glycol and mineral oil. We have also started serving the oil and gas industry by selling specialty chemicals to stimulate production of wells where Pemex stopped producing. We also just started serving the animal feed segment, where Mexico is the fifth largest market globally.

What are Disan's packaging capabilities and what is its presence across Mexico?

Disan has invested in a US\$200,000 white room so it can package from a five kilo pale, to a drum to a tote. We can do this for products such as sorbitol, glycerin and mineral oil, so it gives us that flexibility in our service to customers. We cover efficiently a 200-km radius around Mexico City, as well as Guadalajara, which means we cover around 90% of the market.

What is the average margin for specialty chemicals in Mexico?

It depends on how specialty chemicals are defined. Generally, specialties are sold, commodities are bought. A ballpark figure for specialties is within 12% to 15% margins. Therefore, Disan does not sell solvents which would make us pennies and are too easy to steal and resell. We have a strong relationship with Dow Corning and when you sell products like theirs, there are not that many competitors.

What is the level of opportunity in the chemical distribution market?

In certain commodities the big players are aiming for more volume but are unwilling to make smaller margins, whilst smaller companies cannot survive on single digit margins. Over the last decade chemical prices went down and it was a buyer's market. However, over the last months, the whole chemical market changed and now it is the other way around – strategic buyers want to talk with us about availability and security of supply.

The number of cargo thefts grew by 127% in 2017, with chemicals being the second

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Logistics and Services

"Infrastructure in Mexico is not good enough at present. Too much cargo is being moved by truck and rail infrastructure needs to be greatly improved. Highways also need to be upgraded, especially those connecting ports with Mexico's hinterland."

- Martin Sack,
managing director,
Leschaco Mexicana



Logistics

Mexico's dynamic import market requires investment in new infrastructure

As Mexico imports more chemicals, demands for storage are increasing, meaning good news for logistics companies. At the same time, the energy reform has transformed the importation market for oil and gas as previously only PMI Comercio Internacional, Pemex's international trading company, was allowed to import products like gasoline and diesel. Oiltanking Mexico is taking advantage of this trend and will operate two terminals and a pipeline for the storage and transportation of diesels and gasolines. The demand

for fuels and gas has, according to Richard Ricardo Diogo, director business development, Oiltanking Mexico, "meant more attention generally on the wider market and this has pushed up more foreign investment into chemicals." The demand for fuels has taken away some capacity for chemical storage and driven up demand for services in this area, just as imports of chemicals are expected to rise. "For the short and medium term, we foresee more imports coming into Mexico from both the oil and chemical sides," says Ralf

There is some idle capacity in the Mexican market which is expected to become operational with either imported or domestically produced feedstock as a consequence of the energy reform. Therefore, we do see some growth in petrochemical exports in the coming years. At the same time, the United States is a natural supplier to Mexico due to the proximity of ports along the US Gulf Coast.

- Cristhian Pérez,
managing director,
Vopak Mexico



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Martin Sack

Managing Director
LESCHACO MEXICANA

Infrastructure is not good enough in Mexico. Too much cargo is being moved by truck and rail infrastructure needs to be greatly improved. Highways also need to be upgraded, especially those connecting ports with Mexico's hinterland.

Could you provide an overview of Leschaco's focus areas and an update on its performance since 2015?

We are a global freight forwarder, offering international transport and services by air and sea freight as well as domestic services like customs clearance and inland haulage. At the same time, we are also a tank operator, with our own global fleet of more than 4,500 tanks, which is very useful for the chemical industry. We are one of the few companies to provide both these services. Leschaco Mexicana is on a very good track in terms of growth as it is increasing its volumes by double digits every year.

What role does Leschaco Mexicana play in the company's wider Latin American operations?

Whilst we do not yet have official regional responsibilities, we work in close collaboration with our Leschaco colleagues in Brazil, Chile and the United States and travel frequently to meet our customers across Latin America. The regional aspect is becoming more important to our organization given that we work with clients who make decisions in other countries besides Mexico.

Official figures show that there are 300 to 400 freight forwarders in Mexico. How does Leschaco stand out from the crowd?

The real number of freight forwarders may be double this figure. We are focused on our core business, which is the chemical industry. We do not just offer competitive rates but also deep expertise gained from working with the chemical industry since our founding in 1879. We are one of only a few freight forwarders to have a specialized department working on safety, which reviews documentation from our customers to ensure it meets international standards and complies with an increasingly demanding regulatory environment.

Secondly, we focus on the complete supply chain and provide door-to-door services, which we combine with lead-logistics products where we are involved in the processes of our customers. Clients want to outsource tasks associated with importing and exporting which can be a headache for them, such as documentation and dealing with authorities, to specialized logistics companies. We see a big opportunity to make lives easier

for them so they can focus on production and sales.

Logistics costs in Mexico are more expensive than most developed markets. How can this reality be improved?

Infrastructure is not good enough at present. Too much cargo is being moved by truck and rail infrastructure needs to be greatly improved. Highways also need to be upgraded, especially those connecting ports with Mexico's hinterland. We are seeing major growth of capacity at ports, such as a new terminal at the Port of Veracruz and additional capacity at the Port of Manzanillo. A new container terminal also opened last year at the Port of Lázaro Cárdenas, but the government is not spending enough on better road and rail connection to ports.

The threat posed by organized crime to road and railway infrastructure is also a big concern for us as trucking and rail companies are attacked or threatened on a daily basis. Regrettably, the authorities do not help much so it is up to the private industry to mitigate threats just as costs are increasing for private security providers.

What specific measures do you take to mitigate security risks?

Leschaco frequently and deeply audits its service providers to streamline common practices. We also have specific processes in place with our major customers, such as private custody services for specific cargo. Some cargo is moved only on particular hours of the day and we frequently change routes. However, there are no specific measures that 100% mitigate the risk and the problem in Mexico is getting worse. Whole trains in Veracruz and around Mexico City are being assaulted by organized crime.

What does Leschaco aim to achieve in three years' time?

The main objectives are growth and developing new services and products. Based on a clear trend we are seeing, we will offer more than the standard products the market offers. Modern IT services to fulfil the needs of our customers are also a key priority. Despite infrastructure and security issues, we are very optimistic about growth in Mexico. The energy reforms will bring good news for the chemical industry and as a specialist in the chemicals logistics we see much opportunity.



Ricardo Diogo

Director Business Development
OILTANKING MEXICO

Can you provide a brief history of Oiltanking's presence in Mexico?

Oiltanking has been present in Mexico for fifteen years. From 2002 to 2011, we tried to enter the market through local partners in the gas industry, which was relatively more open compared to the crude and fuel markets. No major project materialized so we decided to put our business on standby and wait for the energy reform. Over the last two years, we have expedited our monitoring of Mexico as we have begun seeing many opportunities with Pemex and private players due to the energy reform. Therefore since April 2017, we have established a new team in Mexico to explore opportunities. Generally, we are more focused on oil, oil derivatives and gas but are also monitoring chemicals.

What has been the effect of the energy reform on the chemical market?

Chemicals were always a more open market but the opening up of the fuels and gas markets has meant more attention and this has pushed up more foreign investment into chemicals. From our perspective, the energy reform is definitely happening and things are really moving, despite a few hiccups. We of course want faster progress but if one steps back, we can see that a lot has been achieved. In fact, some parts of the reform have actually been delivered ahead of schedule. The new rules and regulations will facilitate the opening up of the market, more investment and a recovery of oil production.

We hope the new government follows the same path. Mexico would lose if it went back on the energy reforms given the country is producing 50% to 55% of what it was producing some 14 years ago and Pemex is still heavily indebted, which is one of the reasons why it is looking for partners. Refineries need upgrades which Pemex does not have the money to complete and refining capacity is actually decreasing compared to a growing yearly demand of 2% to 3%. Mexico currently covers more than 50% of its fuel demand through imports.

What are your growth plans for the future?

We have been involved in one of the top importing projects of fuels (diesel and gasolines) in Mexico, located in Tuxpan at the Gulf Coast. Oiltanking will not own the terminals but is supervising construction works and will operate them. The project will involve two terminals and one pipeline. This will be our first step in having true operations in Mexico. In parallel, we are also exploring other opportunities, especially on the Pacific Coast and up north. Mexico is a key country within Oiltanking's growth strategy.

What will be the competitive advantages of these terminals?

The location is highly beneficial and will have a pipeline, unlike some other terminals, which brings much flexibility compared to truck and rail, which are less efficient. This is why the big traders and oil companies prefer fuels to be moved by pipeline. Tuxpan is also closer to the central region of Mexico, at approximately 300km from Mexico City, than the city of Veracruz, and is also the largest port for fuel imports to this region. Furthermore, health, safety, security and environment (HSSE) has always been core to our operations as we realize we work in a business with high risks. In the last couple of years, the company, from the highest level down, has been making an effort to have not just an HSSE policy but also to ensure our company culture also has HSSE at its core. We want to bring even higher HSSE standards than international norms, quality operations and high levels of corporate social responsibility to Mexico. We believe this, along with our experience, is one of the reasons why we have been chosen as a third party operator of the terminals.

How will you mitigate security risks?

Fuel theft is a problem in Mexico but measures can be taken to mitigate the risk and we plan to have a security company dedicated to this task. Of course there are other common measures such as the use of drones, patrols and technology to measure pressure within the pipeline, as well as the implementation of enhanced information security to prevent organized crime from stealing fuel. ■

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- Helio Coelho,
director of sales Latin America,
BDP International

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van der Ven, commercial and business development director, Vopak Americas. Peter Staartjes, CEO of Andino Holdings, adds that this will require significant investment in new infrastructure: “Mexico has already started a very robust development of their infrastructure, primarily driven by the lack of gasoline and diesel produced in the country. Recently, we have heard a flurry of announcements, especially on terminals and other facilities capable of supplying the country with its fuel needs.”

In fact, the increasing imports come at a time when Mexico's infrastructure in general is struggling to keep up. In the first half of 2017, there was major congestion at some of Mexico's ports, in particular the port of Veracruz, a significant port for chemical import activities.

Martin Sack, managing director of freight forwarder Leschaco, which specializes in logistics for the chemical industry, says the infrastructure is not good enough: “Too much cargo is being moved by truck and rail

infrastructure, whilst getting better, needs to be greatly improved. Highways also need to be upgraded, especially those connecting ports with Mexico's hinterland.”

Security is also a key concern for companies in Mexico, and adds a significant burden to logistics cost and risk. Trucking and rail companies are attacked daily. “Whole trains in Veracruz and around Mexico City are being assaulted by organized crime,” according to Sack of Leschaco, that provides private custody services for specific cargo and only moves some cargo at particular hours and changes routes frequently. “There are no specific measures that 100% mitigates the risk and the problem in Mexico is getting worse,” he said.

When it comes to security, perhaps Mexico's distribution and logistics market is a victim of its own success. Johnny Silva, managing director of Disan Mexico, sums up the growth potential sentiment: “Mexico is the biggest opportunity in Latin America. From here you can import chemicals from everywhere as Mexico has free trade agreements with many countries. There are very few import taxes on chemicals.”

As Mexico's economy continues to mature and as long as it continues to pursue a highly proactive free-trade policy, this is a market that will continue to grow. ■

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We have been involved in one of the top importing projects of fuels, located in Tuxpan. The project will involve two terminals and one pipeline. In parallel, we are also exploring other opportunities, especially on the Pacific Coast and up north.

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Peter Staartjes

CEO
ANDINO HOLDINGS

“

Our Tuxpan facility is a very important asset for our future since it allows us to be an alternative for producers in the United States and elsewhere in serving the needs of small and medium sized customers in Mexico.

”



Image: Andino Holdings

Could you provide a brief background to Andino Holdings?

Andino is composed of four separate profit centers, namely trading, shipping, bulk liquid chemical storage and the facilities needed for our fulfillment activity. Andino also has a well-staffed business and development division responsible for investments and acquisitions mainly of terminals and fulfillment facilities.

As a distributor, what is the thinking behind encouraging direct contact between end users and producers?

After many years in the distribution business, my conclusion was that there was so much focus on suppliers and on conflict of interest resolution that it became obvious to me the customer was incidental. Andino's intention is to bring customers back into focus by building the most efficient and economical supply chain to support the fulfillment of chemical raw materials, especially to smaller and medium sized customers to whom producers are currently not able to sell. Andino has offices and personnel as well as legal entities in multiple countries such as Mexico, Colombia, Ecuador and Peru. To our knowledge, no

other companies have employed a model like ours.

As Mexico's economy matures, more specialty chemicals are being demanded. How focused is Andino on such chemicals?

A specific example of this would be our terminal in Tuxpan, located in the state of Veracruz. Our intention is to convert this into a complete mixing and blending facility where we can offer end users, especially in oil and gas, solutions for all their different needs in a strategically located facility. We will have bulk liquid commodities as well as dry and specialty products all available to be mixed according to the instructions and needs of the different service companies in the area. Therefore, we will be creating value by offering mixing, blending and packaging.

How important is Mexico to Andino's wider operations in Latin America and what will be the impact of the acquisition of the marine terminal in Tuxpan?

Mexico is by far the largest market for us in Latin America but offers so much more value for our regional development;

it provides not only terminal operation possibilities, but also creates trade lanes for our self-directed vessels we employ on both the Caribbean and Pacific sides of the country. Our ambition is not only to service our customers in Mexico with products from the US but also from Latin American producers who count on us to help them expand into international markets.

As to the impact of our terminal acquisition, we have owned the Tuxpan facility since September 2017. It was built by Dow Chemical in the 1960s and taken over by Exxon Chemical in the 1990s and always has been kept in excellent shape. It is a very important asset for our future since it allows us to be an alternative for producers in the United States and elsewhere in serving the needs of small and medium sized customers in Mexico.

The NAFTA negotiations are still ongoing. Are you concerned about potential negative impact from the negotiations?

I have lived and worked in various countries in Latin America for my entire life and know that these types of changes can be good for some and bad for others. What

matters most is to understand the implications, embrace the change and always make sure you are part of the solution. Flexibility is absolutely key, which is why Andino will, to the extent that it can, always control its logistical assets to ensure that our future will not be dictated by politically directed mandates.

What is the outlook for Mexico as a key market?

Mexico has a growing population and their basic needs are food, transportation and jobs. The automotive and additional appliances industries will always continue to be a cornerstone of Mexican industrialists due to the country's proximity to United States, as well as its very well-educated labor force. We particularly believe in a very strong oil and gas market thanks to the regulatory change that took place recently and successful rounds of tenders for off-shore drilling that have ensued. The need for imported chemicals in Mexico will continue to grow at a healthy pace and we believe that service and infrastructure will be paramount to capitalize on this and to capture potential growth in the Mexican market. ■

Andikem

andikem.com.mx

Roberto Luna

Chemical and Petrochemical
Industry Manager
ENDRESS+HAUSER

What is Endress+Hauser's role in the Mexican market?

Endress+Hauser provides instruments, services and solutions. We have a wide portfolio of instruments for the chemical industry for the measurement of temperature, pressure, flow, level, gas analysis and liquid analysis. We also provide full solutions to complement these instruments such as inventory management, as well as remote services and field services. We are involved in the whole project lifecycle of a chemical plant. We work with companies such as Grupo Idesa, Braskem, Mexichem, BASF, PPG Industries and Braskem Idesa in countries like Mexico, the United States and Germany to develop new solutions and products.

How positive is the capex market in Mexico at the moment?

It is a challenging environment for Mexico. Investment had started to rise, but then President Trump got elected and the NAFTA negotiations started. This has scared off investment in Mexico. Investors are waiting to see what will happen in the near future and that has stopped market growth. Another development which has made investors cautious has been the election and the debate about the energy reform.

López Obrador has said he wants to refurbish some of Mexico's refineries. Could this lead to more demand for your products and services?

The refurbishment or building of new refineries would be a good opportunity for Endress+Hauser. On the other hand, under the privatization route there are also good opportunities as there is the potential to work on new terminals for gas and diesel imports, and also with private companies that may work on refurbishing Pemex's refineries. However, the problem is the uncertainty.

How much is Pemex still driving the petrochemical and chemical industries? Has there been more demand from private players due to the energy reform?

Pemex is still one of the most important players in the petrochemical industry, which makes up 40% of the whole Mexican chemical industry, and therefore they still have a lot of influence over the whole chemical supply chain. One of the problems at the moment is that Pemex is not producing

enough feedstock for the industry. Pemex does not have the money to invest in new projects at the moment but this also makes it less attractive for private players to invest; it is a chain. New private investments will take five or six years as they are waiting to see the results of the energy reform and the resolution of NAFTA.

Could you give any example of a project Endress+Hauser has worked on in Mexico?

Many of our products were used on Braskem Idesa's Etileno XXI project, which is producing very good quality ethylene but was using old technology to measure the quality. Endress+Hauser is trying to introduce new technologies in order to measure ethylene and it has bought two companies in the last two years which help with this. One of them is Spectre Sensors which is focused on measuring the quality of natural gas, propylene, ethylene and other products. We use state of the art technology that originated from a NASA mission to Mars where it was used to measure water; after the mission, NASA created Spectre Sensors. The other is Kaiser Optical Systems whose technology can measure the composition of any chemicals. Measurements can be made inside a reactor or a pipeline and it can measure the fermentation of chemicals inside a container, for example.

Does Pemex produce good quality ethylene?

The ethane Pemex sells is of good quality but the technology and process they use to produce ethylene are very old, so the ethylene they produce is not of good quality. Pemex now only produces a small quantity of ethylene because they need to supply Braskem Idesa with ethane.

What are the main priorities of Endress+Hauser going forward?

We want to increase the universe of opportunities for Endress+Hauser and Spectre Sensors in the chemical industry and have a five year plan to reach 12% market share of the automation market by 2020. Currently we have 10%. We are also focusing on Industry 4.0 connectivity through the internet and wireless technologies. We will be installing virtual reality so that our engineers can review and check instruments remotely. ■

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Looking at the Future

"The Mexican economy is very strong and together with Brazil it is the most important in Latin America – it will continue to grow consistently. The market potential is tremendous in Mexico due to the likely effects of the energy reforms on feedstock and because Mexico is very well located to send products to key markets globally."

- Stefan Lepecki,
CEO,
Braskem Idesa



Conclusion: A Time of Transition

Until local production recovers, the wave from the North should be seen as an opportunity to increase competitiveness

As Mexico waits for the energy reform to take effect on its oil and gas production, its giant neighbor to the north is undergoing an energy and petrochemical revolution due to its exploitation of shale gas. The United States is expected to add 10 million mt to 12 million mt of ethylene capacity by 2022 and this will have huge ramifications for petrochemical industries across the world, let alone Mexico or even Latin America. "It will become more difficult to find alternatives to US materials in Latin America, as there is such an expected flood coming out from the US market," says Frédéric de Joybert, regional manager of polymer trading and distribution company Emeraude Polymers. Looking at Mexico's growth trajectory, from a demand perspective the country looks like a promising market due to its growing middle class and booming manufacturing industries. It is now much easier to import basic petrochemicals, resins and intermediates from the United States. NAFTA is unlikely to harm US exports too much given that the US has a large trade surplus with Mexico in petrochemicals and President Trump's key goal is to reduce the US' deficit.

According to Rina Quijada, vice president Latin America at IHS Markit: "The United

States and Mexico are closely linked via rail roads. 20 years ago, the infrastructure was not significant, but today, there is an efficient and competitive railroad system to load hopper cars in Texas and deliver with no major issues in Mexico. Mexico's demand for finished goods continues to grow and this will be met via imported raw materials and parts from the US."

The future may be kinder to Mexico's producers

On the other hand, in terms of production, the situation looks less promising for now, although things could change in the future. With oil prices at a four year high, it would be logical for Pemex to focus more on oil exploration and production. At the same time, private investment in the petrochemical industry is dependent on there being enough feedstock and refining capacity. In terms of refining, private investors, who are likely to refurbish refineries faster than Pemex can, are expected to wait for increased production before committing investment. The hope for Mexico's petrochemical producers is that Braskem Idesa's groundbreaking Etileno XXI project will set the precedent for more investments in the fu-

ture. Whilst imports from the US market will have their impact on Mexico, there is still room for domestic production. However, there are no expectations in the market of another project of this scale at least through to 2025.

For its part, Braskem Idesa believes it will continue to be competitive in the face of US imports. "The global polyethylene market is vast. Global demand will continue to grow, including from China, so there is space for new capacity. Also, complex projects due to come on stream are facing delays, therefore new capacity will be spread out. These two factors mean the impact will not be so great," says Stefan Lepecki, CEO, Braskem Idesa.

Mexico will have to wait until it climbs up the rankings again of petrochemical producers. The government's bold move to shake up Mexico's energy market and the coming online of Etileno XXI have set the potential for a revival, but it will take time. More competitive feedstock will complement the excellent potential in terms of domestic demand and will prove José Luis Uriegas, CEO of Grupo Idesa right when he says: "If a country has good access to feedstocks and markets, the prospects are good. Mexico will have both when the energy reforms properly take effect." ■

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"The whole industry in the region and APLA are focused on how we improve the life cycle of the different products, how we reduce our carbon footprint, and how we maximize recycling, among other steps. Moreover, as an industry we have not been able to communicate how important our industry is for our day-to-day lives, so we need to work on communication and image improving initiatives."

- José Luis Uriegas, past president, APLA



"Plastics are a great sustainability story in terms of how they enable everyday life. What we have to solve, especially in packaging, is what happens to the plastics after they are consumed. At LyondellBasell we have created a circular economy joint venture with SUEZ in Europe, and we have forged a partnership with the Karlsruhe Institute of Technology to do innovation around molecular recycling. We are trying to create technology to unzip the plastic pack to its source as a chemical feedstock to produce new polyethylene."

- Bob Patel, CEO, LyondellBasell



"Today, any company who wants to be member of Abiquim needs to fulfill the requirements of the Responsible Care program. For many years as well, we have been working with Plastivida, an institution that works on the environmental and social aspects of plastics. They are implementing education programs in schools. Overall, we believe the most important issue to address in this subject is education. Well educated people will not cause ocean pollution."

- Fernando Figueiredo, CEO, Abiquim



"We work in the different steps of the circular economy. For instance, from the design stage the products need to be recyclable and environmentally sustainable. Then, we need to raise awareness about the adequate separation and disposal of waste – that is where our *Dale vida al plástico* campaign fits in. Moreover, the authorities need to do selective collection of waste, and informal recyclers need to be organized to improve their activity. Finally, companies should recycle waste to create new products."

- Daniel Mitchell, president, Acoplásticos



"While it is our responsibility to make it visible how the chemical industry impacts our world in a positive way, it is also our duty to tackle the issues and provide long-term, sustainable solutions to the contamination problem caused by chemicals and plastics. The industry should work together with local governments, communities, manufacturers, consumers and all stakeholders to propose, develop and implement long-term, sustainable solutions."

- Ignacio Torras, president, Tricon



"Many of our business lines have been focusing on sustainability. For instance, our silica products support the concept of green tires, which reduce fuel consumption. We also just launched a joint venture with DSM for the production of omega-3 fatty acids for the salmon and pet food industries. This is a breakthrough for animal nutrition because, for the first time, it will enable production without using fish oil that puts a strain on the oceans' resources."

- Martin Toscano, president, Evonik Industries de México



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