



ARGENTINA PETROCHEMICALS AND CHEMICALS

2016



*Petrochemicals - Specialty Chemicals - Agrochemicals
Services and Technology - Distribution and Logistics*

**CUANDO BRASKEM
INVIERTE EN
LA INNOVACIÓN
DEL PLÁSTICO,
INVIERTE EN NUEVAS
SOLUCIONES
PARA SU NEGOCIO.**



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Dear Reader,

We cordially welcome you to the Argentina Petrochemicals and Chemicals Industry Exploration 2016, the first book in a series of Industry Explorations between GBR and APLA, released exclusively at the 36° Latin American Petrochemical Annual Meeting.

The 36th edition of the traditional point of meeting of the leaders and decision makers of the industry has been declared of National Interest by the Presidency of the Nation, confirming that this activity represents for both the host country and the entire region a magnificent opportunity to show the progress of the industry, its development and expansion in Latin America, an environment conducive to attracting new investment scenario.

The aim of this cooperation work is to provide an investment guide, highlighting the opportunities for investment in Argentina's petrochemical and chemical industries, particularly in light of the new government administration and the country's upstream potential.

A series of interviews with the key players from across the petrochemical and chemical industries in Argentina, as well as some of the companies providing key support services, such as distribution, third party and integrated logistics, and emergency response, are contained in this edition.

You will also find insights from not only the country's biggest petrochemical producers, including YPF and Dow Argentina, but also comparisons between Argentina and its largest competitors in Latin America, such as Mexico and Brazil. We explore the potential for a shale revolution here, hopefully similar to what happen in the United States, and discuss Argentina's goal of producing enough petrochemicals to satisfy both domestic and regional demand.

Additionally, we deeply discuss Argentina's chemical distribution environment, in which more than 120 companies operate, and the potential for M&A activity now the country has removed international import restrictions.

Please join us in reviewing the opportunities present in Argentina!



Jose Luis Uriegas
President,
APLA

Exclusive Interviews

Leaders from both the private and public sector delve into the nuances and nascent developments that are shaping the industry.

10, 14, 20, 28
and many more



Data and Maps

Quantitative data help readers better understand the position of Argentina, especially relative to its global competitors.

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Editorial Content

Global Business Reports' journalists provide on-the-ground analysis of the trends that are shaping Argentina's oil and gas industry.

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AN INTRODUCTION TO CHEMICALS IN ARGENTINA



"Argentina is now at the right stage to focus on foreign investment and therefore should be of interest to U.S., European and Asian investors attending our Annual Meeting. Attendees from North America are looking for opportunities that could arise from Latin America, both as a potential market for their extra capacity, and as an opportunity for new production projects across the region."

- Jose Luis Uriegas,
President,
APLA

Argentina's year of change

By Harriet Bailey

Transition. This one word sums up much that there is to say about the huge upheavals taking place in the politics, economics and foreign policy of Latin America's third largest country, Argentina, in 2016. President Mauricio Macri was voted in on December 10th, 2015. To say that the Cambiemos coalition government found itself at the bottom of a very long uphill climb would be an understatement.

Macri faced three big issues at the start of his four-year term: rocketing inflation, mounting international debt and an overvalued peso. In what has been dubbed his "macro-economic shock treatment", his first move was to abandon *el cepo*, "the clamp", pegging the peso to the dollar, allowing Argentina's national currency to float freely for the first time since 2011. It quickly devalued by around one-third, falling into line with its street value of approximately 15 pesos to the dollar. This, however, led to even higher inflation, exceeding 40% by the end of June, with some estimates in the capital Buenos Aires hitting 47%. During 2017, inflation is due to stabilise at around 27%.

Just weeks into his time in office, Macri became the first Argentine President in thirteen years to attend the World Economic Forum in Davos, signaling a new era for Argentina's international relations and a focus on attracting foreign investment. In his first interview with the foreign press on the eve of his attendance, he stated his plan for the Argentina of the future: "We have to be a predictable and trustworthy country. We have to show investors that their rights will be respected, as well as that we will demand that they obey Argentina's laws."

Making good on this statement, Macri's government promised to resume the publication of credible economic data. Going even further in allaying the fears of foreign investors, the first few months of 2016 also saw the new government reach an agreement with its creditors after many years of refusing to pay, ostensibly due to lack of funds, of a \$4.6 billion defaulted debt to a group of U.S. hedge funds led by Elliott Management. Macri subsequently stated he would not be seeking further debt financing for another three to four years, effectively ruling out any more foreign loans until after the next election.

Macri quickly set about re-building relationships with global powers, hosting U.S. President Barack Obama in March before paying a visit to Washington D.C. himself. This signaled a distinct break with the foreign policy. European leaders have either visited or been visited by Macri, while Middle Eastern heads of state, such as the Emir of Qatar, have also visited the Pink House in recent months.

Macri estimates \$100 billion in foreign investment is needed to get the country back on track. By directing all of Argentina's problems to be resolved as soon as possible, the hope may be to win international backing sooner rather than late and has led to Macri winning the moniker of "a man in a hurry" from President Obama.

However, it could be argued that it is in itself a mistake to try to reverse the last 12

437.8
BILLION USD
GDP
Source: IMF (2016 estimates)

10,051
USD
GDP per capita
Source: IMF (2016 estimates)

years of Argentina's economic decisions so rapidly. "The big questions now surround Argentina's fiscal deficit, along with inflation levels. We need to recover credibility from the international community, which is a challenge for Argentina as we need foreign investment going forward," explained Miguel Morley, president of agrochemical company Agroservicios Pampeanos, part of Canada-based Agrium. "The government is attempting to solve this problem whilst protecting the weakest segments of society. One in three Argentines are below the poverty line and it is challenging to take action while also protecting this segment."

Government subsidies on utilities, introduced to pay off energy providers and keep prices at artificially low levels, have been removed, resulting in increases of up to 700% on household bills. In response to public protest, Macri has promised to introduce a cap of 400%. By the end of the year, GDP is expected to have dropped by 1.5%, although it should recover by three to four points during 2017.

However, Macri may be betting on short-term pain for long-term gain and a more favorable climate closer to the election date in later 2019. Revising the previous government's official figures, the incumbent government's new statistics agency reported a \$3 billion trade deficit for the previous year; Argentina achieved a trade surplus of \$126 million for June 2016. "The current cabinet is one of the strongest Argentina has seen, containing qualified professionals in the financial arena, so we are optimistic for the future," continued Morley.

Considering Brazil's internal woes and Macri's aggressive actions both at home and abroad, Argentina could yet become the most positive market for growth in South America.

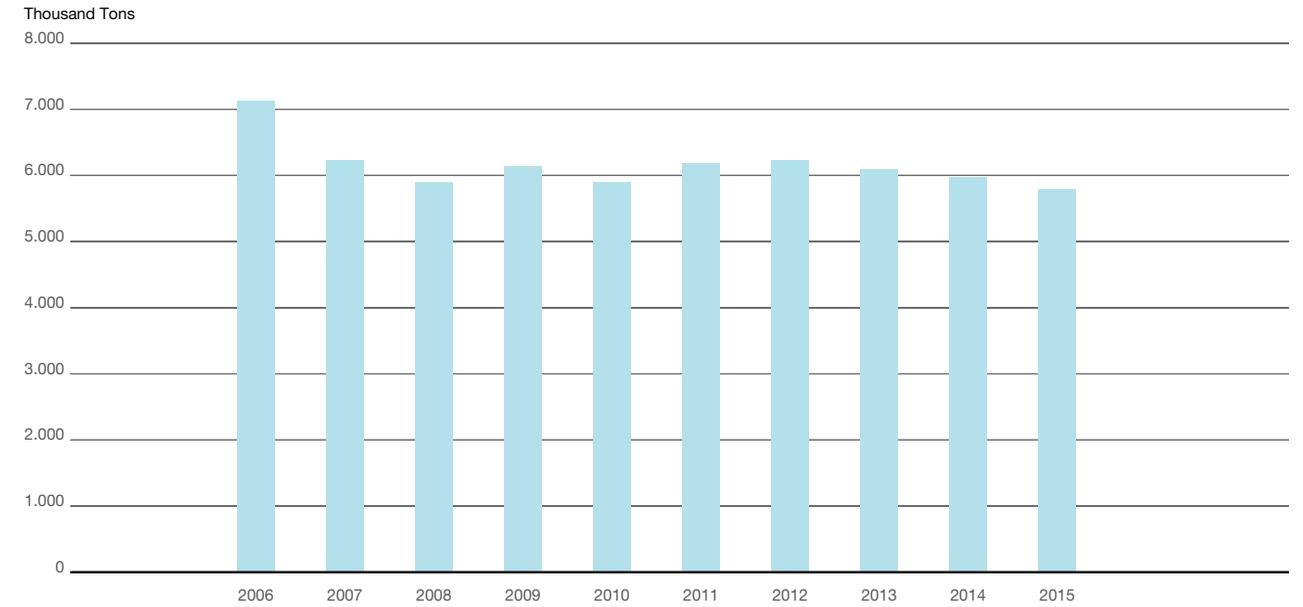
-1.6%
Current account balance (% of GDP)
Source: IMF (2016 estimates)

43.5
MILLION
population
Source: IMF (2016 estimates)

7.7%
unemployment rate
Source: IMF (2016 estimates)

PETROCHEMICAL PRODUCTION

Source: IPA

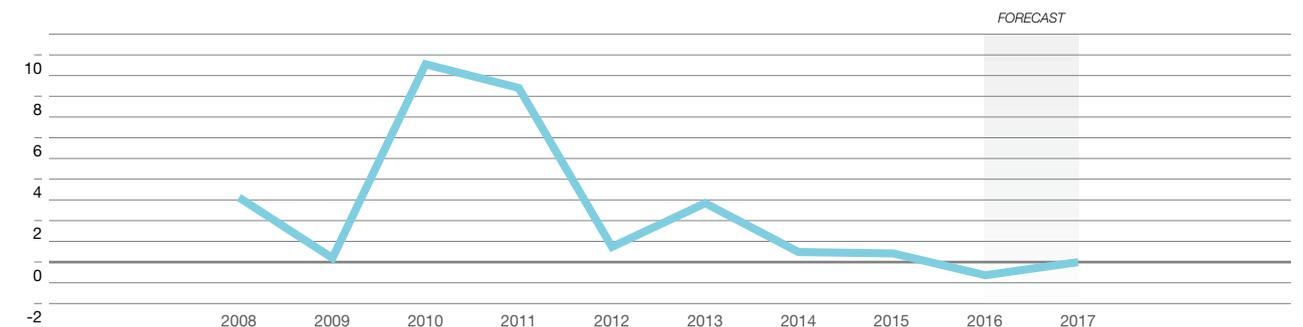


22,303
USD
GDP per capita (PPP)
Source: IMF (2016 estimates)

17.9%
Total investment (% of GDP)
Source: IMF (2016 estimates)

GROWTH, 2008-2017

Source: International Monetary Fund





Juan Procaccini

Executive President & CEO
**ARGENTINA INVESTMENT
AND TRADE PROMOTION
AGENCY (AAICI)**

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At the Investment Forum we recently held, attendance exceeded all expectations, in terms of numbers and the quality of the people that came to Buenos Aires. We are preparing a plan of public investments worth \$250 billion, and this government is working on new legislation for public-private partnerships (PPP) so the world can help us move this plan forwards, not only from a financial side but also from a perspective of technology transfer and local know-how development.

”

What was the rationale behind the creation of the new Investment and Trade Promotion Agency?

The Macri administration has a clear objective of inserting Argentina back into the world economy. We come from a period of political, economical and commercial isolation, and this government understands that economic growth will only be achieved through investment and wealth generation. There was a need for an agency that helped both Argentinean and foreign investors with their processes. The Agency has two roles: on one side, Invest Argentina tries to promote investment, while ExportAr looks at helping local SMEs export their products and services, building up greater capacities. At some point Argentina had over 15,000 exporting SMEs, today we only have 9,000 due to the trade barriers we had in place for the last years. We provide training, financing, modern tools and participation in global fairs, to reactivate the exporters segment. With regard to Invest Argentina, we want to work together with Argentinean and foreign groups that have assets in the country or want to further invest in Argentina. This includes explaining to those investors that have never been to Argentina about how the country works, and offer them contact with the whole public system, including ministers and provincial governors. We also aim to have open channels of communication with them once they have decided to invest in the country. We want to reduce bureaucracy and simplify processes, eliminating the barriers that made Argentina less competitive, in terms of taxes, permitting and other aspects.

As a destination for foreign investment, how does Argentina compare to other Latin American countries?

We compared the levels of investment as a percentage of GDP in the different countries around the region, over the last six years. Argentina's ratio was four or five percentage points below countries like Colombia, Peru, Chile and Brazil. If we consider a GDP of \$600 billion, this means around \$25 billion of investment annually, public and private, that Argentina should have received and did not receive. If you look at foreign direct investment (FDI) specifically, it is very meaningful to look at Argentina's figures from the 1990s, and the

figures from the last six years. Over the last six years, investment volumes in the region grew and reached an average of \$125 billion annually. Yet Argentina, who used to receive 16% of the region's FDI, attracted only 4% of the total last year. To make up for this, Argentina should attract \$200 billion over the next eight years, an average of \$25 billion annually. Since December 2015, we have already identified \$40 billion worth of commitments from different industry players.

What segments offer more potential, and how can these investments help develop value chains?

After a decade of no investment, there are huge opportunities across all sectors: energy, infrastructure, petrochemicals, agriculture, mining and industry. We have outstanding natural resources and excellent human capital. At the Investment Forum we recently held, attendance exceeded all expectations, in terms of numbers and the quality of the people that came to Buenos Aires. We are preparing a plan of public investments worth \$250 billion, and this government is working on new legislation for public-private partnerships (PPP) so the world can help us move this plan forwards, not only from a financial side but also from a perspective of technology transfer and local know-how development.

In order to invest in a country, you need profitability and predictability. Another key aspect is the resources. Chile exports between \$35 and \$40 billion worth of minerals, 10 times more than Argentina, so Argentina has huge mineral potential that has not been exploited. The same happens with our shale resources. Argentina has the world's second largest shale gas deposit, which is still to be explored and developed. Of course, the price of oil is not good, but technology costs are going down significantly. Then we have impressive lithium reserves.

CEOs of companies like BP or Dow have a clear vision about the opportunities that Argentina offers. As the Agency, we are here to help: our doors are open, we have highly-trained personnel, and we want to work together with companies to make processes more efficient in Argentina. We have a 10 to 15-year growth period ahead of us, and the moment to invest is now. —



Jose Luis Uriegas

President
APLA

“

Our 2016 event is to be held in Buenos Aires. This has been a strategic choice; Argentina is in a burgeoning position because of its unconventional resources in areas such as Vaca Muerta. Additionally, the new government is more open to foreign investment and promoting the industry, which will enable the country to take advantage of its huge oil and gas reserves.

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APLA's 2015 Annual Meeting was held in Mexico. Could you provide us with a brief overview of what APLA aims to achieve from its Annual Meetings and what attendees can expect?

We celebrated our 35th Annual Meeting in Cancun, covering conventional and unconventional hydrocarbons, their composition throughout the Latin American region and the sustainability of businesses. We have held previous events in cities such as Rio de Janeiro, Mexico City, and Santiago, while our 2016 event is to be held in Buenos Aires. This has been a strategic choice; Argentina is in a burgeoning position because of its unconventional resources in areas such as Vaca Muerta. Additionally, the new government is more open to foreign investment and promoting the industry, which will enable the country to take advantage of its huge oil and gas reserves.

A third of participants at the 2015 Annual Meeting were from the United States. What is the general feeling of foreign investors towards the petrochemical and chemical industries in Latin America, and Argentina in particular?

U.S. attendees can use the conference to gain a more direct overview of the opportunities available in countries such as Argentina, Mexico and Brazil, as well as emerging commercial and investment opportunities. Those countries interested in trade with Latin America can gauge the size of the market from our meeting. Regarding Argentina, the country is now at the right stage to focus on foreign investment and therefore should be of interest to U.S., European and Asian investors attending our Annual Meeting.

We are seeing increasing numbers of U.S. companies attend our events; they have experience from the shale gas revolution and several petrochemical plants are set to come online before 2020. Attendees from North America are looking for opportunities that could arise from Latin America, both as a potential market for their extra capacity, and as an opportunity for new production projects across the region.

Within Latin America, which countries have a strong potential for the future of their chemical and petrochemical industries and what reasons lie behind this?

Every country has different characteristics. Brazil does not have abundant ethane and struggles to remain competitive in the production of ethane-related products. However, the current low international oil prices we are seeing means Brazil is as competitive as it was four years ago. In neighboring Argentina, although the domestic market is around one quarter the size of Brazil, it has very competitive unconventional resources. When companies can prove they can produce high volumes of shale gas, this will lead to higher investment volumes. Argentina has the opportunity to become very competitive and will be able to export to different markets within Latin America.

Moving north, Mexico has very competitive plants and raw materials as it is connected to the North American pricing system. The problem is in the short term; all of the country's additional ethane will be dedicated to the new Braskem/Idesa Ethylene XXI plant. Therefore I do not expect that we will see additional large investment in the short term until this stabilizes. From 2020 onwards we can expect significant additional availability of ethane and this could lead to further foreign investment in new plants.

How does APLA expect to play a role in improving the prospects of the Argentine petrochemical industry in future?

In terms of the region as a whole, although emerging countries are not growing at the pace that was predicted a few years ago, we continue to maintain confidence in our markets as they grow. The population and spending power of our people is growing and that will present many opportunities both for investment and as end markets. This region, which is not homogeneous, is increasingly working together through APLA to try to become as competitive as possible. —



Manuel Diaz

Executive Director
APLA

What changes have you seen in Argentina's chemical industry during the last two years and how important are the chemical and petrochemical industries to the country's growth and success?

In my opinion, the main change occurred when YPF started developing Vaca Muerta in partnership with Dow Argentina and other international companies. The petrochemical industry has felt the feedstock deficit the most and therefore any opportunity to increase our production of raw materials and gain investment is positive. We can compare Vaca Muerta to the shale plays in the United States, although our ability to gain immediate foreign investment is dissimilar due to our smaller domestic and regional market. As well as working capital, we also gain expertise from companies with experience working in the United States. We will not see

an overnight revolution here as in North America, but we can immediately increase our production due to the country's unused capacity.

Could you explain the reason behind APLA's decision to hold the 2016 Annual Meeting in Buenos Aires?

The main reason is the current economic and political situation in Argentina. It is a good opportunity to showcase Argentina's potential to the 1,000 attendees we expect to host, who are mostly decision-makers and high-level executives looking to invest in the region. The 2015 Annual Meeting was held in Cancun as a result of the new Ethylene XXI plant in Mexico, which was the most important investment in Latin America at that time. The next opportunity now resides in Argentina, as the economic situation has improved with the change in government.

What effect will an increase in production in Argentina have on neighboring countries?

It will impact all of the region because Brazil uses naphtha feedstock as a raw material, while Argentina uses natural gas. We will not only be able to supply the demand in the domestic market, but will also be able to export the over-supply of hydrocarbons to neighboring markets in Chile, Paraguay and Uruguay. Our main product is ethane, which can be produced in abundance using shale gas, and we will also be able to develop a range of petrochemical products for export. The petrochemical industry has a long history in Argentina and the extent of the Vaca Muerta reserves will rejuvenate this. With this feedstock, we can invite foreign investors to allocate capital to Argentina and develop future world-class projects.

What are some of the challenges that could impede growth of the Argentine petrochemical industry?

One of our biggest challenges is infrastructure investment. We currently have high logistics costs due to a lack of investment in the country's infrastructure in recent years, particularly when trading with neighboring markets. The ports in

particular require modernization; if we can increase capacity, our competitiveness as a major player in Latin America will greatly improve. APLA also hosts an annual logistics meeting; for 2016 this takes place in Panama, as the expansion of the Canal this year affects the transportation plans of the whole Latin American region.

In terms of Argentina's network of gas pipelines, it is good, but not good enough. It is very easy to add new production to our existing infrastructure, but we need to improve the capacity of these pipelines to accommodate the increased production of natural gas that we will see in the country.

Does APLA have any initiatives in place to increase the availability of a skilled workforce in the region?

All of Latin America faces a problem in terms of technical education, not just Argentina. It is essential for APLA to work closely with universities and the government to provide people with these skills, and APLA, in association with IPA and the University of San Martin, offers seven scholarships in the petrochemical industry to post-doctoral students from any country in Latin America. In order to ensure the availability of qualified personnel for the future development of the industry, we need to train people now.

In terms of a technically trained workforce, Argentina has been working for a long time, through organizations such as Y-TEC and CONICET, to develop new technology. The Ministry of Science, Innovation and Technology is also working hard to develop our scientists and engineers of the future.

Where can we expect to see the petrochemical industry in Argentina in the medium term?

Argentina is laying the foundations to prepare for future investment through opening the market, improving infrastructure and demonstrating Argentina's reputation as a business-friendly country. It is the focus of this government to gain investments in various industries, with the petrochemical sector being a key area for growth. I hope to see important, world-class investment in Argentina over the next decade. —



Ignacio Millán

President
INSTITUTO PETROQUÍMICO
ARGENTINO (IPA)

Argentina is home to the world's second largest shale gas reserves. What would the large-scale production of these resources mean for Argentina's petrochemical industry?

Argentina's petrochemical industry is one of the few in the world that stands to be transformed by the exploitation of unconventional hydrocarbon resources. In general, the development of any petrochemical and chemical industry depends on three drivers to succeed: the availability of raw material, access to technology, and a market. South America boasts these three drivers and they are especially converging in Argentina.

For the last six years, the American shale revolution has breathed new life into the country's petrochemical industry. Argentina's own unconventional resources could similarly boost the Argentine petrochemical industry.

How important will South American demand, not just Argentine demand, be to the development of Argentina's petrochemical industry?

The South American market, including Argentina and especially Brazil, is a net importer of polymers and other chemical and petrochemical products. In general, our region shows very attractive growth rates because there is still a gap to reach the consumption per capita of most developed countries. The regional demand for imports reflects a strong market for petrochemicals and this situation will continue if there is no additional capacity. Other regions rarely boast all three necessary drivers. For example, the Middle East abounds in feedstock but lacks a domestic market exporting to China, or other markets with a stronger demand for petrochemicals. In this way, Argentina has the potential to not only fully supply the domestic market but also to competitively export petrochemicals to the region.

Does South America aim to substitute specialty chemical imports?

In Argentina, most of the chemical trade deficit is due to specialty chemical imports. Nevertheless, I believe investment opportunities in this field should be directed to those areas where the region has competitive advantages and vertical integration synergies such as in EOR, paints, composite materials, and detergents, among others. Argentina's scientific system is one of the most prestigious in the world and we are becoming a very strong pillar to develop innovation programs in new products, processes and services. The potential to increase added value to commodity products is there.

What should Argentina's petrochemical industry invest in?

Argentina's petrochemical industry experienced almost four waves of development since its beginning in 1942 (the first toluene facility in Campana, Buenos Aires). The main drivers focused on import substitution, feedstock integration and economy development. The last wave of investment took place in the late 1990s and the early 2000s as a result of PBB Polisor expansion and the construction of YPF's methanol plant and the Profertil complex. Today, the development of unconventional resources and a regional market composed of net im-

porters of product has opened the door to a new investment cycle. In this way, the investment would probably be directed to new capacity integrated with unconventional production; more efficient processes in order to optimize energy consumption; improved infrastructure such as port expansion, increased storage, and a focus on the railways; and innovation. Of course, as we have seen in the past, particularly in the U.S. expansion process, the growth of the petrochemical industry will establish excellent conditions for downstream and conversion sector growth.

Does Argentina have the necessary human capital to support the development of the country's petrochemical industry?

One of the major challenges for Argentina's petrochemical industry is the human resource. The petrochemical and chemical industry employs more than 100,000 people, and most of them have qualifications for their role. Around 30% are engineers or other skilled operators. New capacity in the United States is expected to increase plastics industry employment by more than 20%, while each of those direct jobs generates a further 6.3 new employees in the rest of the economy. Within a span of seven years, a new petrochemical complex and the resulting downstream industry would present an additional high demand for qualified personnel. Thus, the petrochemical industry would be competing in a highly competitive environment in order to recruit the best talent. At IPA, we are focused on providing the best solution to this challenge and we are proud to lead the most prestigious petrochemical program in South America.

Much of the Argentine petrochemical industry's success depends on the large-scale production of the country's unconventional resources, which has not yet begun. Should investors invest in Argentina's petrochemical industry now?

Investors should recall the first-mover advantage. Those that take the risk in heavily investing in an opportunity before others are those that later reap significant profit. Now is the time to invest in Argentina's petrochemical industry. IPA is fully oriented to support the requirements of the industry, government and all other players involved in this unique opportunity. —



Jorge de Zavaleta

Executive Director
CÁMARA DE LA INDUSTRIA QUÍMICA Y PETROQUÍMICA (CIQYP)

Can you provide a historical overview of the petrochemical sector in Argentina?

The petrochemical industry started in Argentina in the 1950s and has seen three waves of investment since then. The first wave washed over Argentina in the 1950s and 1960s, when multinational companies and important entrepreneurs came, noting the opportunities in the production of chemicals and petrochemicals. The country had several advantages, such as its refining capacity, which was exceptionally high for the time. Multinationals took advantage of the feedstock provided by Argentina's oil and gas industry that started in 1908. Companies such as Monsanto entered Argentina to build plants, focusing on the production of final products, such as plastics. Argentina also built the first gas pipeline in Latin America in the 1940s, connecting Comodoro Rivadavia to Buenos Aires. Invest-

ments stopped, however, when Fabricaciones Militares, a part of the Argentine army, took control of much of the petrochemical industry. The army still owns some strategic petrochemical and chemical plants that produce nitric and sulfuric acids for explosives.

The second wave of the investment in petrochemicals occurred in the late 1970s and early 1980s. Fabricaciones Militares built Argentina's first ethylene cracker in the late 1970s at Bahía Blanca, which became one of the most important petrochemical centers in the country.

The third wave occurred in the late 1990s and early 2000s, characterized by the construction of several new plants that were propelled by the growing supply of natural gas feedstock. Oil refining capacity has remained about the same, at around 500,000 barrels per day for the last 20 to 25 years, which has led to bigger investments in natural gas and natural gas liquids than in oil. The third wave ended in 2003, after which the petrochemical industry enjoyed full production until 2007, when a combination of issues arose. Declining oil and gas production combined with a series of tough winters to make petrochemicals suffer a shortage of natural gas. Winters after 2007 saw increasing demand for natural gas for household heating and other gas-consuming activities. The government prioritized household consumption of natural gas over the industry's needs for steam and feedstock.

Currently, petrochemical companies operate on average at below 90% of their capacity. During winter, they have an average of 50% to 60% asset utilization. Some plants in Bahía Blanca that are incapable of running at low capacity shut down almost completely in the middle of winter.

What kind of investment should the chemical and petrochemical industry in Argentina expect, and what is CIQYP's strategy to take advantage of potential investment?

CIQYP developed a new strategic roadmap for the chemical and petrochemical chamber, as it is at the beginning of a new wave of investment, similar to the past three,

which will require a three-part strategy. First, it must support its members by helping them understand government rules and regulations, as well as by acting as a single voice for their interests.

The second area lies in cooperating with the government on issues such as competitiveness, and the third area focuses on the safe and sustainable production of chemicals and petrochemicals.

Can you describe CIQYP's role as a representative of the chemical and petrochemical industries in labor negotiations with unions?

The chamber represents the chemical and petrochemical industries before all relevant unions, except those at Bahía Blanca and Zárate-Campana. The chamber does not communicate with these last two unions since they only operate regionally, unlike most unions, which operate nationally. Labor negotiations start at the beginning of every March when the chamber meets with unions to discuss the state of the market and their expectations for workers' rights. Negotiations end with the approval of the labor minister. In these negotiations, the chamber serves as a facilitator between the unions and chemical and petrochemical sector representatives. Most negotiations focus on wages and rarely touch upon legal reform, since labor laws are difficult to amend.

How would you describe the outlook for the chemical and petrochemical industry in Argentina?

The chemical and petrochemical industry in Argentina represents 12% of the total Domestic Industrial Production, and their exports represents 25% of total industrial exports. The chemical and petrochemical industries have a bright future thanks to the quality and size of the country's infrastructure, market, technology, an extensive history in hydrocarbons, and refineries. Importantly, Argentina has a mature hydrocarbon industry with gas pipes connecting all gas fields. Moreover, Argentina has vast unconventional resources that, if successfully developed, would greatly benefit the petrochemical industry. —

The case for chemicals: Argentina's growth prospects

By Harriet Bailey

Argentina's chemical industry dates back to the Second World War. "The military began this industry in 1942 as a result of the war effort, but the Armed Forces only consumed around 4% of the total manufactured chemicals. YPF began its chemical operations in 1944 and these two events were really the foundations of the petrochemical industry in the country," explained Enrique Grotz, partner and oil and gas leader at EY.

Argentina is now the third largest chemical industry in Latin America after Brazil and Mexico, accounting for almost 1% of the global chemical industry in 2010 and directly employing more than 100,000 people. Chemical production in the same year totaled almost \$25.5 billion and, of this, basic chemicals made up around one quarter, with agrochemicals & fertilizers and specialty chemicals accounting for

13% and 15% respectively. The remaining 50% of production came from paints and coatings, cosmetics and pharmaceutical products. According to Jorge de Zavaleta, executive director of the Chamber of the Chemical and Petrochemical Industries (CIQYP): "The chemical and petrochemical industries in Argentina represent 12% of total domestic industrial production, and their exports represent 25% of total industrial exports. The chemical and petrochemical industries have a bright future thanks to the quality and size of the country's infrastructure, market, technology, an extensive history in hydrocarbons, and refineries."

Representing the interests of the petrochemical and chemical industries in Argentina, and Latin America as a whole, is the Association of Petrochemicals and Chemicals Latin America (APLA). The

association is connected to more than 100 companies and provides its members with the opportunity to network as well as gain relevant industry information. "Our most important event is the Latin American Annual Meeting, at which attendees can meet and interact with different companies from all over the world to develop business and share ideas," explained president Jose Luis Uriegas. "Although our annual meetings have a focus on Latin America, we also receive attendees from outside of the region who are looking for opportunities here."

The country is deceptively large; the eighth-biggest in the world, it is almost 3,700 kilometers (km) from north to south, and only around 620 km shorter than mainland United States is wide. Vaca Muerta, located in Neuquén province in the west, is the largest shale deposit in the country and covers an area the size of Belgium and

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Image: Profertil

means Argentina has the third largest shale reserves in the world behind the United States and China. According to consultancy IHS Markit's senior director of Latin America Chemicals, Rina Quijada: "Investors looking at Latin America will find Vaca Muerta in Argentina much more attractive today than in previous years. The biggest advantage Argentina has today, aside from its feedstock, is its new administration and proposed reforms." In addition to having the second largest shale gas reserves and the fourth largest shale oil reserves worldwide according to the U.S. Energy Information Administration (EIA), the price of Argentina's oil and gas was vastly different from the global norm. As a result of generous state subsidies imposed by Fernández de Kirchner, Argentina's hydrocarbons were the most expensive in the world, with natural gas per million British thermal units at more than three times international prices when Macri came into office. His administration has started to phase out these subsidies and eliminate the gap with overseas markets, implementing a 10% decrease in the per-barrel price in the first week of 2016. Global players, such as Shell Argentina's president Teófilo Lacroze, believe that, rather than regulating the price of oil and gas, the government should incentivize new production. Although Fernández de

Kirchner's government passed the Hydrocarbons Reform Law in 2014, aimed at reducing both government takings and taxation levels on new explorations, foreign investment was not forthcoming due to regulatory uncertainty and a distinct lack of free-market policies. The petrochemical sector has not seen an industry-changing investment in almost two decades and, despite Macri's reforms, new petrochemical complexes are unlikely to be in the pipeline for another ten years. Although the door has been opened to foreign investors looking for the next shale revolution, much-needed transportation and infrastructure projects failed to win political support during the previous government; such issues will need to be addressed quickly in order to attract the high volumes of foreign capital required. In 2011, as a result of the last administration's interventionist policies, Argentina became a net importer of energy for the first time since 1984. Raw material availability was severely depleted and, as such, petrochemical complexes have not been operating at capacity for more than half a decade. However, as this import/export trend inverts, Argentina will rapidly be able to absorb an increase in the availability of feedstocks, while simultaneously investing in the expansion and modernization of plants for further growth. If all

of Argentina's estimated unconventional reserves—802 tcf of gas and 28 billion barrels of oil—could be proved as technically recoverable, its oil production horizon would extend more than 100 years and its gas production more than 600, setting it on the path not only to self-sufficiency, but also to being able to supply neighboring countries. "The petrochemical industry has a long history in Argentina and the extent of the Vaca Muerta reserves will rejuvenate this. With this feedstock, we can invite foreign investors to allocate capital to Argentina and develop future world-class projects," said APLA's executive director Manuel Diaz. "I hope to see important, world-class investment in Argentina over the next decade."

Chemical appeal

It is not just in the petrochemicals space where positive feeling abounds; agrochemical manufacturers also see the potential for great opportunities at home and abroad. Upon taking office in December 2015, Macri immediately demonstrated the importance of the agricultural industry to Argentina's overall economic might by removing controversial restrictions on agricultural products, introduced by Argentina's previous administration to bol-

ster government revenue. Making good on his campaign pledge, export taxes on foodstuffs such as wheat, corn and beef – which were at 23%, 20% and 15% respectively – were completely removed. Levies on soybean derivatives remain in place, but were lowered from 35% to 30%. Three months later, President Macri arrived by helicopter to a field just outside Rosario in Santa Fe province. His appearance marked a turning point for the agricultural industry, including global players such as Monsanto and Syngenta, which had assembled at the annual Expoagro event; a President had not been in attendance since before the turn of the millennium. Addressing the assembled crowds, he spoke of an impending "production revolution" in the fields of Argentina: "We know that the world has a food crisis. We want our valuable raw materials to provide the solution." He continued: "I have made it clear to the Ministry of Agroindustry that we have to take responsibility for the smaller producers – who may in time become medium- or larger-sized producers – because in order to achieve growth, we have to go forward together, as one family." Almost 1.5 million square kilometres (km²) of the country's 2.8 million km² land mass is arable land used for Argentina's legendary cattle ranches, sheep stations and crop fields, producing wheat,

corn and sorghum among other grains. Almost 20 million hectares alone is dedicated to the infamous soybean, with Argentina being the world's third largest producer of the crop behind the United States and Brazil. Using a mixture of crop protection products, biotechnology and the no-till growing system, introduced to Argentina in the 1970s, agricultural production doubled from around 50 million tons per year in 2001 to 100 million tons a decade later. Active support from the highest levels of government is invaluable in achieving Argentina's potential to feed the world. Agrochemical suppliers have survived challenging times, when high export taxes reduced a farmer's ability to buy agrochemical products; removing these restrictions has proved to be the necessary catalyst for an uptick in planting and therefore an increase in the need for both crop protection products and fertilizers. The perceived improvement is felt in both a surge in sales, and in communication with the government, leading some firms, such as Nova S.A., based in Santa Fe province, to expand their operations: "Business owners need predictability, and the new government is starting to provide this," explained general manager Mauro Piva. "All of our distributors have a positive attitude with regards to the recent governmental changes and, as a result, we have been en-

couraged to invest further in products and infrastructure." Argentina can therefore become not only an important global player in terms of agrochemical production, but has all the ingredients required to become an attractive investment destination for multinational petrochemical players, including world-scale reserves, a new government bent on normalizing the economy and the capacity for rapid production increases. The improvements felt in future planning with the new administration should ensure that Argentina's ranking on the World Bank's Ease of doing business Index, currently in 121st place out of 189 countries in June 2015, rises and global players take advantage of the opportunities on offer in the southern cone's most dynamic region. According to Rodolfo Perez Wertheim, director general at chemical manufacturer Meranol, there is no time like the present for the government and the energy industry to come up with a strategy for future growth: "The chemical industry depends on oil and gas and, at present, Argentina has a deficit in this matter. If the government agrees to supply energy to the whole industry, it will encourage the chemical industry to invest in different products. We believe that this is going to happen, therefore we think that the right moment to invest in the market is now." —

Dr. Alfredo G. Friedlander

Executive Director
INSTITUTO PETROQUÍMICO ARGENTINO (IPA)



What do you expect for the petrochemical industry in Argentina during the course of 2016?

We will not see any new plants starting up, because at the moment no new projects exist. Nothing has been signed with engineering or technology companies. However, it is likely that we will see efforts to increase capacity. Argentina is very short on gas, particularly in winter. The lack of product also affects ethylene production, particularly in areas such as Bahia Blanca. I think that the new government will try to improve supply. We have already seen improvements to the exchange rate; previously we saw problems with importing raw materials and exporting finished products.

Which products do you anticipate the industry will focus on in future?

This will depend on the new authorities of YPF. The petrochemical department's aim is to resurrect the aromatic industry, but one of the issues we currently face is the small sizes of a number of Argentine plants. This prevents them from competing economically and a number of projects are currently mothballed. The paraxylene unit, for example, is only 40,000 tons/year (t/y) and utilizes outdated crystallization technology, so is not economically viable at present. Perhaps in the future, if funding is secured, the construction of larger plants would allow the industry to compete. I believe there may be very interesting possibilities for Argentina, working with Brazil, through the development of bi-national projects. A greater agreement between Brazil and Argentina, in terms of export, shared trade and manufacture, would be very convenient for both countries in future due to their close proximity.

As both Argentina and Brazil are looking to focus on specialty chemicals, is there any rivalry that you see between the respective countries' petrochemical industries?

History shows that not many bi-national projects have gone ahead between Brazil and Argentina. However, with our new government, it seems likely that foreign investors will gain interest in plant construction within Argentina, with a view to exporting to the Brazilian and wider Latin American markets. Taking toluene di-isocyanate (TDI) as an example, Rio Tercero is the sole producer in Argentina and Brazil, but there is competition from foreign markets.

As Argentina increases production of finished products at home, which imported products are most likely to be affected first?

In general, we export our thermoplastics at a lower capacity than we import, resulting in a yearly deficit. Thermoplastics are strongly linked to GDP and, as this is expected to rise, so too will the demand for these products. Internal thermoplastic manufacture could easily replace the requirement for import; however, the manufacture of thermoplastics, such as polyethylene, requires an improvement in our ethylene infrastructure. Aromatics are not as responsive to GDP increases, while we will see greater fluctuation in the paraxylene market.

Regarding IPA's Petrochemical Industry Specialization degree program, who applies and how many students pass through each year?

The degree program is a distance postgraduate learning program, under the direction of IPA and the National University of San Martin (UNSAM). The program is designed to help higher education professionals with their general knowledge of the petrochemical industry, providing conceptual categories, decision parameters and patterns of action that allow them to improve their professional performance.

Around 30 people take the course each year. It has a total of 11 subjects, five of which are obligatory. Applicants are required to have a degree in engineering or similar before they start, and the overall degree takes around two years to achieve, culminating in a thesis. Approximately 50% of students are from Argentina, with the remainder hailing from across Latin America.

Considering the increasing focus on sustainability within the industry, will we see the hydrocarbon resource being used more in the energy or petrochemical sectors?

I think the greatest volume of natural gas will be used in the energy market. However, the development of new synthetic processes, for example those that produce useful feedstocks from methanol, are of particular interest to the petrochemical industry. 50% of Argentinian energy usage comes from gas and, while there is the prospect of using new greener sources such as wind power, it is expected we will continue to use the larger portion of our natural gas for fuel rather than as a feedstock. —



Rina Quijada

Senior Director Latin America Chemicals
IHS MARKIT

Could you briefly explain the services and products IHS Markit can offer clients and how much of a role the chemical segment plays in the company's overall strategy?

IHS Markit has been created from the merger between IHS and Markit to harness the deepest sources of information, analytics and expertise to forge solutions for industries and markets that drive economies worldwide. We partner with leaders in business, finance and government to help our customers be more efficient and make more informed decisions to secure their future. IHS Markit and its Chemical and Energy divisions provide solutions for the oil-related and petrochemical derivative industries. We are integrated from feedstock to finished product and we cover the business globally. We cover all the pieces of the information puzzle which enables companies to evaluate solutions to help make decisions in line with market trends.

Could you tell us about some of your events, such as the IHS World Petrochemical Conference (WPC) and the Latin American Petrochemical and Polymers Conference (LAPPC)?

IHS Markit provides insight to clients through conferences throughout the year; our main event is the World Petrochemical Conference (WPC), which takes place annually in Houston, Texas, in March. This event includes a specific Latin American Petrochemical Summit and we also produce a Latin American Petrochemical and Plastics Conference (LAPPC) every November.

What views do international investors hold on the petrochemical industries in Latin America?

During 2010 and through 2014, the BRIC countries attracted investments globally. However, since 2014, Brazil and other countries in Latin America have reported reduced economic growth. Today, investment opportunities in the industry have slowed down. The investment environment in energy-related industries has deteriorated and key economies in the region, such as Brazil and Venezuela, are reporting negative GDP performance for 2015 and 2016. The chemical industry is global and therefore the economic fluctuations in China and the increase of interest rates in the United States have led to a more cautious invest-

ment mood. However, we believe there are investment opportunities available, and companies are looking at their infrastructure and making efficiency savings.

Latin America is a developing region with a large market of more than 680 million people; these economies continue to grow despite their economic and political issues. We believe new investments in the region will take place in countries with abundant, readily available, competitively priced feedstock. In Mexico, Braskem/Idesa's new plant began production in April 2016. This new capacity will be able to produce slightly more than one million ton/year of ethylene and polyethylene derivatives, while the country's energy reforms will make it easier for U.S. natural gas to enter Mexico in the near future.

Argentina has good potential, although with many economic issues to overcome. Investors looking at Latin America will find Vaca Muerta in Argentina much more attractive today. The Vaca Muerta shale play, on the border with Chile in the Neuquén province, has great potential for Argentina. A gas pipeline system is already in place, it is abundant; but with international oil and gas prices at their lowest in more than a decade, we might see some delays. An added bonus for Argentina is the new government: the country is slowly developing a political environment conducive to attracting foreign direct investment. The biggest advantage Argentina has today, aside from its feedstock, is its new administration and proposed reforms.

Could you give us a final message about the Latin American petrochemical industry's future potential?

Latin America's market size is its greatest asset. Trade and an adequate business environment will be necessary to grow the industry in the region. Meanwhile, growing demand will be met with increased imports. Countries such as Brazil will continue to invest in local markets as well as abroad to access competitively priced feedstock supplies. With anticipated investment in Vaca Muerta, the pipelines between Argentina and neighboring countries could be an option for additional feedstock for the petrochemical industry. We expect to see moderate expansions at current production facilities in the region. However, no significant additional capacity is expected in the region through to 2020. —



George Martin

Senior Consultant
ICIS

Could you provide us with an overview of ICIS's operations and the services it provides clients?

Our strategic positioning in the market started with the commodity price reports, which we provide on nearly 100 chemicals. Without an independent reference such as ours, many companies have vague ideas about the value of a chemical product and are at a disadvantage to negotiate fair agreements with suppliers and buyers. We also have a comprehensive news service. One of our biggest advantages is having price and news reporters in strategic locations around the world, so we can provide regional price information as well as global news 24/7. With several important acquisitions the company has built an important position in consulting and analytics - activities that complement our massive supply and demand database as well as our price histories and news.

We also organize many conferences per year and provide introductory and advanced training courses on petrochemicals. We can also provide tailor-made

courses designed to address specific needs that companies may have.

Could you give us your opinion on the state of the Argentine economy under the new government administration and any impacts on the petrochemical industry?

Argentina is now perceived as having a government more open to the rest of the world that will try to align itself with the way other developed countries do things. The previous government had a more confrontational style, which put the country at odds with the rest of the world. The problem in Latin America as a whole, not just in Argentina, is the lack of basic raw materials such as olefins and aromatics. We will not see companies investing in plastics, solvents or any other chemical plant if they do not have access to competitively priced raw materials.

Government-controlled energy prices in Argentina in the last 20 years had removed all incentives for drilling and exploration, and the country inevitably turned into a net importer of energy. The main opportunity for increasing Argentina's raw materials output currently lies with Dow and YPF's joint venture in Vaca Muerta; the most likely outcome of this will be extra gas production, which Dow can utilize in the Bahia Blanca complex, leading to the construction of a new ethylene plant. But even this project now has a more difficult path because international oil and gas prices have declined. In addition, the current shale gas explosion in the United States has made it almost impossible to compete. Many projects in Latin America have been put on hold because of these concerns.

Is there enough appetite for developing the market here when there is already a global over-supply of product?

The main difference between the production of shale gas in the United States and Argentina is that the wells in Vaca Muerta are deeper, which increases production costs. Even if Argentina can become self-sufficient in terms of energy production, low international crude oil prices will still be a problem. The cost of naphtha-based ethylene production is now comparatively low and results in a wider range of chemicals than gas cracking can provide. Naphtha cracking yields slightly less ethylene, but also gives heavier olefins such as pro-

pylene and butadiene, as well as some aromatics. The result is that there is less incentive to build an ethane cracker now that oil prices are low.

Furthermore, the technology for alternative energy sources such as wind and solar is also getting cheaper with every passing day, steering demand away from fossil fuels. This suggests that oil price recovery could be slower this time than in previous crude oil crashes. The proliferation of alternative sources of energy, conservation and recycling policies in many countries, and the current glut of oil and shale gas in international markets, create unfavorable conditions for the development of Vaca Muerta at this time.

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Even if Argentina can become self-sufficient in terms of energy production, low international crude oil prices will still be a problem. The cost of naphtha-based ethylene production is now comparatively low and results in a wider range of chemicals than gas cracking can provide.

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What is your final message about the future for ICIS and where the company is headed?

We have tremendous volumes of useful information: historic supply and demand pricing and forecasts, short and long-term price forecasts, news and analysis, conferences and training. We are implementing new ways to deliver our information and continue to improve our website to make it more user-friendly. We are also improving our methodology and accuracy and, having incorporated comprehensive record-keeping measures and transparency in our procedures, we are fully compliant with the guidelines of international organizations regulating price reporting agencies. ICIS strives to become the global benchmark for energy and petrochemical information, keeping in mind that the path to this goal passes through improved customer service. —



Enrique Grotz & Germán Cantalupi

EG: Partner and Oil & Gas Leader
GC: Partner
EY

“

The current pricing in Argentina is good for the industry's development, but petrochemical companies need to think longer term. If their focus is on exporting, Argentina's pricing must be more aligned with international markets.

”

Could you provide us with an overview of EY's petrochemical and chemical operations in Argentina and any recent milestones the company has undergone?

EG: EY traditionally focused on energy, chemicals and utilities as one large sector. In 2014, as a result of dwindling investment in these areas, the decision was made to split this large segment up into a number of more focused specialties: Oil & Gas, Power & Utilities, Mining & Metals, and Chemicals. We have 200 people dedicated to petrochemicals in Argentina, working with all the big names in their various jurisdictions.

How do you advise your petrochemical clients to optimize their costs?

EG: One of the main factors is logistics; in our experience, this is a key area for gaining efficiencies. Transport costs are very high in Argentina, so we analyze the way our clients transport both raw materials and finished products. Because of the difficulties we have seen in railroads in the last few years, trucking has increased. We help our clients reduce transportation times and optimize warehouse locations in order to reduce costs.

YPF and Dow agreed a \$500 million joint venture to explore for shale gas in Argentina. Does this signal a new wave of investment in the country?

EG: The shale gas vision has been a global catalyst for activity and played a key role in Dow's decision to move upstream. They moved first and they moved the fastest, and took the crucial decision to move to the upstream business for the first time. This decision was not an easy one to take for a large corporation such as Dow and was no doubt influenced by other companies deciding to invest in the Vaca Muerta shale play. EY works with companies mostly in the tax arena, which is particularly important as there have been recent changes to Argentina's tax regime.

At present, we are seeing six foreign companies conduct due diligence into Argentinian companies. The middle of 2015 saw the start of some movement, but nobody has yet decided to invest. Once the macro-economic issues have been solved, such as the exchange rate and government policies, we should see a flow of investment.

GC: With the current economic uncertainty following the election result, asset pric-

es are very difficult to estimate. Nobody wants to move first, so a lot of research and investigation is being conducted but nothing concrete is taking place. The uncertainty is related to the pricing of raw materials, which is a political rather than a market issue in Argentina. If the government puts different regulations and taxes on raw materials it will affect prices. With greater clarity in the economic landscape, we will see more action.

What are the long-term factors that will have an impact on future M&A in the industry?

EG: We know we have distorted oil and gas prices in Argentina. Oil prices here are around \$70 per barrel, while gas prices are around 7.5 MBtu. Argentina has a deficit of gas which will work until the point of self-sufficiency. If you pay three times the international price for a raw material, the final product will not be as competitive. The current pricing in Argentina is good for the industry's development, but petrochemical companies need to think longer term. If their focus is on exporting, Argentina's pricing must be more aligned with international markets.

Does EY have a final message for our GBR readers?

EG: I am generally optimistic about the petrochemical industry in Argentina and believe that, once the business environment becomes more predictable and we see some long-term trends, we will see significant activity in this area. We need to look ahead over the next two decades: in around ten years we will see Argentina become self-sufficient in terms of hydrocarbons, which will positively impact the petrochemical industry. We then need to focus on exporting - Argentina currently only exports around 0.8 million tons of product per year, but this does not make economic sense today.

GC: We also need to focus on gaining foreign investment. Local companies have not invested in increasing capacity but, in most cases, we have modern technology in the plants which will enable us to use the idle capacity to increase production in a meaningful way. We have an excellent opportunity in the short- to medium-term and I am confident that, in the near future and once conditions become more favorable to petrochemical investors, we will see the result of current decision-making. —



PETROCHEMICALS



"The chemical and petrochemical industry in Argentina represents 12% of the total Domestic Industrial Production, and their exports represents 25% of total industrial exports. The industry has a bright future thanks to the quality and size of the country's infrastructure, market, technology, an extensive history in hydrocarbons, and refineries."

- Jorge de Zavaleta,
Executive Director,
CIQyP

Partnerships create opportunities for petrochemical dominance

By Harriet Bailey

In November 2011, a major find in the Vaca Muerta shale play in Neuquén province by Argentina's national energy company Yacimientos Petrolíferos Fiscales (YPF) signalled a new era for the country's petrochemical industry. Crippled by dwindling oil and gas reserves, Argentina had recently become a net importer of energy for the first time since 1984. Just as the shale gas revolution in the United States has reinvigorated its own stagnating petrochemical industry, similar sized reserves in Vaca Muerta could see the "Dead Cow" reviving to breathe new life into upstream and downstream sectors and, in turn, improve the fortunes of an entire country.

Although the country boasts the three factors required to develop any petrochemical industry - readily available feedstocks, access to technology, and a receptive domestic market, according to Ignacio Millan, president at the Argentine Institute of Petrochemicals (IPA) - Argentina has been unable to capitalise on these findings as quickly as the North Americans for a number of reasons. A closed-door policy to foreign investment from the previous populist government, combined with regulatory uncertainty and high taxation on new explorations, was far from attractive to foreign investors. Furthermore, much-needed transportation and infrastructure projects failed to win political support; bottlenecks in pipelines need to be addressed and industrial rail transportation is all but non-existent in the country.

In this regard, however, Argentina's new, business-minded president Mauricio Macri is aware of the need for action and the door to foreign investment has been flung wide open. "I know there is an enormous pending debt on infrastructure. We can develop not only the roads, but also the trains and waterways. There has been a huge lack of investment," he stated at an event in March 2016, "but working side-by-side with governors and mayors we will begin collaborating on solutions as soon as possible."

It will be a number of years until Argentina experiences the type of transformative activity seen in the United States in recent years, or even to the next Ethylene XXI plant, as in Mexico. Argentina has not seen any investment in its petrochemical industry since the early 2000s, when several new plants were built to provide capacity for the growing supply of natural gas feedstock, according to Jorge de

Zavaleta, executive director of the Chamber of Chemical and Petrochemical Industries (CIQyP). He sees Argentina at the start of a new wave of investment, and defined a new strategic roadmap for future activity: "The chamber defined a chemicals and petrochemicals outlook that looked to 2025. CIQyP explained to the Ministry of Industry that the development of the petrochemical industry would hinge on the development of the country's hydrocarbon industry, which would likely occur in earnest no earlier than 2020," stated de Zavaleta.

Leading the way in terms of new investments since the change in government is YPF, which signed a \$500 million, 50/50 agreement to conduct exploration and development projects in Vaca Muerta with its latest collaborator, American Energy Partners, at the start of 2016. "We believe that our new partner, American Energy Partners, will contribute expertise of the highest level to develop shale oil and gas in Argentina. This partnership will definitely accelerate YPF's unconventional learning curve," explained former CEO Miguel Galluccio. "After the first stage is completed by mid-2018, the project would enter into the full field development phase in "U.S.-style shale manufacturing" mode."

As the third largest petrochemical producer in South America, YPF wants to lead Argentina to energy self-sufficiency. A ready supply of hydrocarbons would also allow for the country to be self-sufficient in terms of petrochemicals and improve its manufacturing base. YPF's chemical executive manager, Marcos Sabelli, recognises the building blocks required to achieve YPF's plan: "The success of YPF and Argentina's petrochemical business rests on four pillars: abundant feedstocks, a strong market, a world-scale plant, and a world-class partner."

The company owns two petrochemical complexes in Argentina: the La Plata Industrial Complex (CILP) in Ensenada, Buenos Aires province, which has both a refinery and a petrochemical plant, and one in Plaza Huincul, to take advantage of the Vaca Muerta shale play in Neuquén province. It also owns a 50% stake in Profertil, one of the largest urea and fertilizer plants in the world (located in the port town of Bahía Blanca, Argentina's chemical heartland), as well as a 38% stake in petrochemical company Compañía Mega. The remaining two shareholders in the latter partnership are Brazil-based energy company Petrobras, which has a 34% shareholding and receives LPG and natural gasoline from its investment, and Dow Argentina, which secured an additional ethane supply for a 28% stake. The three companies made a \$720 million investment in the company in 2001, marking the last new petrochemical installation in Argentina; since then the industry has seen only refinery renovations and improvements. "Compañía Mega is a producer of ethane, propane, butane and natural gasoline. We have two complementary plants connected by a pipeline; our natural gas separation plant is located in Loma La Lata in the Neuquén basin, while our fractionation plant, storage and loading facilities are in Bahía Blanca," explained general manager Hugo Tormo. "During the last fifteen years Compañía Mega has contributed significantly to Argentina's commercial balance."

Tormo sees increasing production in Neuquén as a natural consequence of the country's overall goal to reverse its energy deficit, and already supplies the domestic petrochemical industry with around two-thirds of its ethane requirements. He is optimistic about the new government's understanding of the requirements of both the national and international business communities and is already seeing signs

of investment in the industry. "Compañía Mega aims to be an essential protagonist in the processing of new gas production in the Neuquén basin and a reference for the oil and gas and petrochemical industries," he continued.

Exploring next door

Sabelli stated that YPF's next goal is to increase the supply of petrochemical products derived from natural gas liquids in order to reduce the country's dependency on imports from Bolivia. In July 2016, the company made the first steps to realising this goal, signing an agreement with its Bolivian counterpart, YPFB, to conduct its first explorations in the country. If the estimated 2.7 trillion cubic feet of natural gas reserves can be proved, YPF and YPFB will invest in a joint venture worth more than \$1 billion.

At present, Argentina is a net importer of raw materials, and is reliant on 1,300 km of pipelines running from Córdoba province to Bolivia. Refinor (Refinería del Norte S.A.), formed in 1992 as part of the YPF privatisation process, is the only downstream company in the Argentine northwest region and is operating at one third of its available capacity due to lack of feedstock. Its Campo Duran plant is linked to Bolivia by the Juana de Azurduy pipeline, constructed in 2011, and has been the sole operator of the feedstock Argentina receives from Bolivia since 2012. "The possibility to increase gas imports from Bolivia was a good opportunity for Refinor, considering our strategic location," said Fernando Caratti, Refinor's general manager. "Since then, the company has started to process Bolivian gas to make up for the decrease in domestic gas production."

Despite the dwindling supplies of raw materials, companies have attempted to improve yield from the hydrocarbons available. YPF invested more than \$450 million in a new continuous catalytic reformer unit at CILP to double its capacity for producing high-value aromatics, used for generating the petrochemicals benzene, toluene and xylene, from low-value naphtha. According to Rina Quijada, senior director Latin America Chemicals at consultancy IHS Markit, the Argentine petrochemical industry will be highly dependent on imported aromatics in the short term, as gas-based petrochemicals could increase production capacity for olefins and derivatives.

But YPF knows it is at the start of a long road to fully exploiting the opportunities offered by the Neuquén and Bolivian gas reserves. By ramping up the production of unconventional hydrocarbons, the company can achieve its goal of obtaining 50% of its gas production from the new formations by 2020, leading to an expansion in its petrochemical production. "There is an important opportunity to create a regional hub for petrochemical production in Argentina led by polyethylene, polypropylene (PP) and other polyolefins and derivatives," he continued. "This will make it possible to replace imports and become a net exporter of petrochemicals."

Positive partnerships

In order to set the conditions necessary to invest in a world-scale plant, it seems likely that companies will need to work together. In August 2015, YPF announced its intention to acquire a 46% stake in Petroquímica Cuyo and 50% of LyondellBasell's Petroken for a total of \$122 million. By the end of the year, however, the deal had fallen apart; the Argentine Central Bank's lack of physical dollars meant YPF could not complete the transaction. The acquisition would have not only allowed YPF to gain synergies, with Petroquímica Cuyo and Petroken having facilities in close proximity to YPF's plants in Luján de Cuyo and Ensenada respectively, it could also have paved the way for the world-scale plant YPF wants and Argentina needs. "The economies of scale fostered by such a consolidation could facilitate the development of a project for the construction of a new PP plant that would ensure the supply of domestic demand and generate export availabilities," said Jorge R. Sampietro, general manager at Petroquímica Cuyo, on the merger's advantages.

YPF has previously implemented a number of successful partnerships, including between U.S.-based Chevron and Malaysia's national energy company Petronas. A particularly prolific partnership is that between YPF and Dow, in which the former supplies the latter's gas demands. Dow's presence on the Argentine petrochemical scene is, at around six decades, almost as long as YPF's and, despite recent feedstock challenges, the country remains disproportionately represented within Dow's global strategy. "Dow's subsidiary in Argentina is the country's sixth largest in the world, even though



Argentina is the world's 24th largest economy," said Gaston Remy, president at Dow Argentina. "Dow has been recognized as the leader of Argentina's petrochemical industry for the last 60 years."

Dow's main production site is its 120-hectare petrochemical complex in Bahia Blanca, in which it invested 450 million pesos for expansion in November 2014. In a shock move upstream, Dow signed a \$350 million joint venture agreement with YPF to explore the El Orejano gas field in Neuquén eighteen months previously. "[Its] advantages include abundant water resources, a century-old hydrocarbon industry, connection with pipelines and, unlike some areas in the United States, relative under-population," explained Remy of the decision to invest in exploration. "Dow has often been a first-mover within the industry and is deeply committed to supporting Argentina's development and to the company's sustainable growth in the country."

Dow and YPF reaffirmed their commitment to Argentina in late 2015, adding a further \$500 million to their exploration fund for the El Orejano site. Estimates suggest production could reach an average of two million cubic meters per day by the end of 2016 - three times current levels. IPA's Millan believes Argentina's petrochemical industry is worth the investment: "Investors should recall the first mover advantage. Those that take the risk in heavily investing in an opportunity before others are those that later reap significant profit."

Everybody needs good neighbours

As well as the benefits for Argentina from companies joining forces, IPA also considers Argentina working more closely with neighboring Brazil on bi-national projects as bringing certain advantages. This would increase Argentina's domestic market - an attractive prospect for potential investors. "A greater agreement between Brazil and Argentina, in terms of export, shared trade and manufacture, would be very convenient for both countries in the future due to their close proximity," suggested Alfredo G. Friedlander, IPA's executive director.

With a population of more than 200 million compared to Argentina's 43 million, Brazil has the largest domestic market in Latin America. All the countries in the Southern Cone are net importers of polymers and other petrochemicals, reflecting a strong regional demand that could be satisfied with increased local production.

Brazil's Braskem, which claims to be the largest polypropylene (PP) producer in the Americas and the largest polyethylene (PE) producer in Latin America, maintains a presence in Argentina to both serve its clients across the Southern Cone, and as a lucrative end-market for its products. "Argentine demand for PP exceeds domestic production capacity, so the industry needs PP imports from Braskem to continue to run smoothly. At the same time, Argentina has a trade deficit in high-density PE," explained Marcio Sanita de Azevedo, general manager at Braskem Argentina.

While Braskem's PP production capacity reaches almost two million tons per year (tpy), its Argentine competitors, Petroquímica Cuyo and Petroken, produce a combined total of only 310,00 tpy. With the

Brazilian economy slowing down at the same time as Argentina's is opening up, Brazil could face an oversupply of PP, leading Braskem to increase its exports to its southern neighbor. In turn, Petroquímica Cuyo and Petroken could initially struggle to remain competitive until they are able to up their production, which will require additional steady supplies of raw materials.

Braskem's bet on the future of Argentina's abundant unconventional hydrocarbon resources also led it to make a play for Solvay Indupa, the corporation's Argentine producer of PVC and soda; the purchase was, however, vetoed by Brazil's competition authority in November 2014. Despite this, de Azevedo considers Argentina an important market for Braskem into the future and the company's strategy in this regard is to act as a local player, recognising the mutual benefits in cross-country trade: "Braskem imports naphtha from Argentina and exports back polymers. For Brazil, Argentina is a natural market and Braskem tries to see Argentina as an internal market," said de Azevedo.

A future investment

Awareness among foreign companies of the potential in Argentina's unconventional hydrocarbons, combined with the new administration's focus on promoting growth within the petrochemical industry, suggests it is only a matter of time before Argentina achieves the investment required to kick-start new developments along the entire energy stream. However, Argentina's growth could be hamstrung by a lack of qualified personnel to staff new sites, and the human resource is described by IPA's Millan as one of the major challenges for Argentina's petrochemical industry. "The petrochemical industry employs more than 100,000 people, and most of them have qualifications for their role. Around 30% are engineers or other skilled operators," said Millan.

Argentina's current output of students with an engineering degree is around 6,000 to 8,000 per year; a new petrochemical complex would require around 10,000 to 15,000 new engineers, of a total of around 50,000 new technically skilled employees. Over the seven-year timeframe it would take to construct a new petrochemical complex, around 20% of those graduates would need to assume one of those roles on an annual basis. "A new petrochemical complex and the resulting downstream industry would present an additional high demand for qualified personnel. Thus, the petrochemical industry would be competing in a highly competitive environment in order to recruit the best talent," Millan continued.

YPF has taken steps to attract and retain the necessary professionals to accompany its growth, not least by providing assistance with relocating personnel to its various sites across the country. The company has also signed agreements with Argentine universities to develop and train its workforce of the future. "Young professionals join the company through specific programs, and we have implemented paid work experience programs and internships in order to increase numbers of engineering students and promote technical education within our communities," explained YPF's former CEO, Miguel Galuccio.

The need to ensure Argentina keeps pace with global technology in the energy sphere is being advanced by Y-TEC, a research and development (R&D) organization established by YPF and the National Scientific and Technical Research Council (CONICET) in 2013. Its aim is to reduce costs across Argentina's energy stream by developing home-grown technologies, rather than importing them from abroad. "For example, polymers with oleophilic and hydrophobic characteristics could solve environmental issues. We are also studying new technology to obtain internal olefins to produce surfactants for enhanced oil recovery. Additionally, we have started work on a product that includes a new catalyst to obtain acrylonitrile, a key element for the production of several derivatives of great significance for the industry," continued Galuccio.

Two years after its inauguration and YPF's original R&D team of 75 people has been bolstered to around 350 researchers based at a new, 495 million peso Science and Technology Center within YPF's La Plata complex. The space has around 60 dedicated laboratories, focusing on the four areas of upstream, downstream, renewable energy and materials engineering. CONICET's 10,000 researchers and capabilities nationwide are also available to work on Y-TEC projects.

Politically advantaged

Determined local players, interest from across Latin America and an awareness of the requirement for a trained workforce have been in place in Argentina for a couple of years; the complementary factor is a supportive government, which is set to change the fortunes of the petrochemical industry. It now needs to create a political environment conducive to foreign investment by promoting freedom for chemical companies to operate and improving links between Argentina and other economies worldwide. "Investors looking at Latin America will find Vaca Muerta in Argentina much more attractive today than in previous years," said IHS Markit's Quijada. "The big-

gest advantage Argentina has today, aside from its feedstock, is its new administration and proposed reforms."

Not all of Argentina's petrochemical plants are currently operating at full capacity and, at peak periods, some are unable to operate because of the lack of feedstock. It was reported Dow was forced to cease operations at two of its PE plants in October 2015 while, during winter, households and petrochemical complexes compete for available raw materials. "The winters of 2012 and 2013 were particularly challenging as household demand for natural gas was particularly high and the government prioritized supplying households with natural gas," said Javier B. Sato, commercial manager downstream at Petrobras.

Argentina therefore already has the capacity available to increase production without the need for significant investment, before investing in moderate expansion works over the next three years. This will allow time for the various upstream projects to get underway and for commodity prices to rise, stabilising the market in Argentina and demonstrating to those companies currently sitting on the fence to commit to profitable joint ventures for the future. EY's Grotz takes a long-term view on the petrochemical's current situation: "In around ten years we will see Argentina become self-sufficient in terms of hydrocarbons, which will positively impact the petrochemical industry. We then need to focus on exporting - Argentina currently only exports around 0.8 million tons of product per year - but this does not make economic sense today."

With all of YPF's activity on the exploration and production side, as well as in R&D, combined with its partnerships over the last few years, the company's aspiration is clear. "The incorporation of strategic partners responds to the objective of ramping up the unconventional natural gas production to reach energy self-sufficiency and to expand the petrochemical business," commented Galuccio. "We're getting closer to realizing our objective of energy self-sufficiency by putting into production the resources that can change the energy future of our country." —

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Tel.: (+54 11) 5441-5876/5746
Fax: (+54 11) 5441-5872/5731

Marcos Sabelli

Chemical Executive Manager
YPF S.A.



What is the strategy of YPF's Downstream segment?

The downstream segment aims to maximize integration, add value, and improve the production and quality of fuels and petrochemical products offered to the market by taking advantage of the synergies among YPF's chemical and refining activities, as well as its natural gas production. The Complejo Industrial La Plata (CILP), or La Plata Industrial Complex, for example, illustrates the strategy behind the decision to create a single downstream segment. According to YPF's downstream strategy, the CILP is meant to function as a single complex, benefitting from the synergies between the refinery and petrochemical plant. At the CILP, the petrochemical plant receives light naphtha and liquid petroleum gas (LPG) from the refinery as its two main raw materials, and sends back gasoline blend stocks and other products. The petrochemical plant and the refinery share the same maintenance and technical personnel, as well as industrial water, steam, and hydrogen. The petrochemical plant generates hydrogen and octane value products, which the refinery then uses to desulfurize diesel and blend into the gasoline pool.

YPF's strategy is to keep building an integrated company. The petrochemical sector has enormous potential in Argentina and is a key part of the company's growth strategy in an industry which is competitive on a regional level. We believe that YPF has a unique opportunity to become the petrochemical industry's leader in Latin America.

Could you tell us more about YPF's petrochemical clients and the global markets which the company supports?

YPF exports to countries throughout South America, Europe, and the United States. Nevertheless, YPF mainly exports to Brazil. Though commercial travel from Buenos Aires to the north of Brazil is sometimes more expensive than to Rotterdam or Houston, it makes sense to export to Brazil and other Mercosur countries given the common external tariff (and the distance of Argentina from the rest of the world). YPF's petrochemical complexes are strategically located close to competitive supply routes; it therefore makes sense to further integrate with the south of Brazil, with which Argentina can easily exchange goods and raw materials. YPF's Argentine and Brazilian clients are similar, and include other petrochemical companies that buy YPF's basic and intermediate chemicals as well as transformers that buy the company's specialty products for applications further downstream. Some of YPF's important clients in Argentina include Unilever, Procter & Gamble, Petrobras and Río Tercero, among others.

Why has YPF decided to focus on increasing its aromatics production capacity in recent years?

The investment in increasing YPF's aromatics production capacity reflects the company's strategic focus on vertical forward integration. YPF's investments, whether they relate to acquisitions or to capital expenditures, look to take full advantage of the raw materials the company

already produces. Since 2010, Argentina has been short in gasoline and gasoline components. Yet YPF has been in naphtha for many years and was one of the main suppliers of naphtha feedstock to Braskem in Brazil. Given the abundance of naphtha as a feedstock for aromatics, it made sense to invest \$450,000 in a new continuous catalytic reformer unit for the production of aromatics.

How will YPF's downstream segment take advantage of the increased production of unconventional natural gas?

Part of YPF's strategy involves the direct integration of the company's upstream natural gas production with its petrochemical production, without the need for a refinery. As petrochemical companies in the United States have done, YPF hopes to take advantage of the rich gases produced from unconventional gas fields.

Argentina is already rich in gases such as ethane, propane, and butane. Regarding ethane, Dow Argentina and other companies use much of it as feedstock and the rest is used as fuel; propane, meanwhile, is exported by Argentinian companies. As unconventional natural gas production increases in the short and medium term, Argentina will be increasingly able to supply the country's domestic gas needs and decrease natural gas imports both as LNG and from Bolivia. Now that YPF has further increased its production of aromatics, the company's next strategic goal is to supply Argentina and the region with petrochemical products from competitive natural gas liquids.

What is YPF's vision for the petrochemical industry in Argentina?

YPF is the engine of the petrochemical industry in Argentina, being the first petrochemical producer in Argentina and one of the top three in the South American market. Though Argentina exports or burns some petrochemical feedstock, the country continues to import many specialty petrochemicals. YPF wants to lead Argentina not only to energy self-sufficiency, but also petrochemical self-sufficiency. After fully supplying the domestic market, YPF wants to lead the Argentine petrochemical industry to becoming an important supplier in South America.

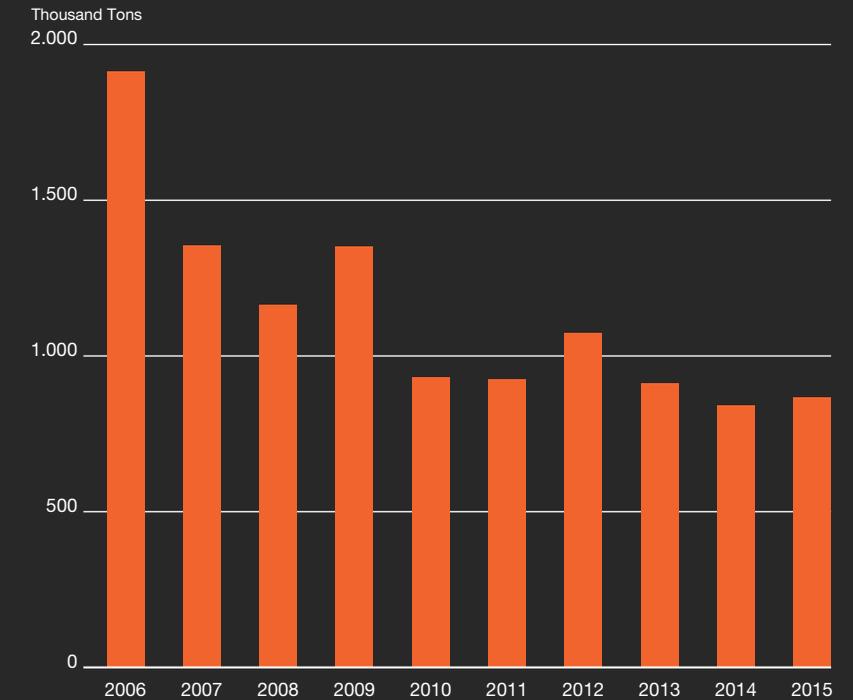
Argentina has not seen an industry-changing investment since the late 1990s. Will YPF make the next big investment in Argentina's petrochemical industry?

YPF aims to build a world-scale petrochemical plant. Even if Argentine demand for petrochemicals may not justify the construction of a world-scale plant, future regional demand does. Once Argentina, Brazil, and other countries in the region resume growth, there will be a huge petrochemical market to supply.

The success of YPF and Argentina's petrochemical business rests on four pillars: abundant feedstocks, a strong market, a world-scale plant, and a world-class partner. The development of Argentina's unconventional oil and gas industry will supply the raw materials, and South America will provide the market demand. Yet Argentina still needs a world-scale plant to supply that market and YPF still needs to solidify a world-class partner. YPF would give and take from such a partnership. YPF would take advantage of the partner's expertise in products such as polyethylene, while the partner would take advantage of YPF's proven ability to oversee billion-dollar projects and to run petrochemical plants in Argentina.

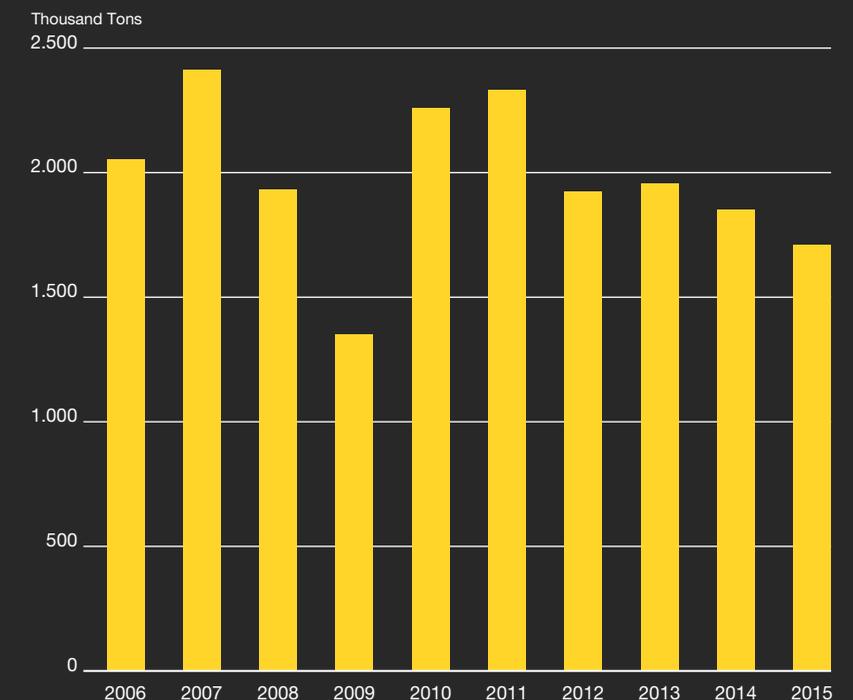
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Gastón Remy

President
DOW ARGENTINA



How important has Dow been to the development of Argentina's petrochemical industry?

Dow has been recognized as the leader of Argentina's petrochemical industry for the last 60 years. Dow has often been a first-mover within the industry and is deeply committed to supporting Argentina's development and to the company's sustainable growth in the country.

Counting the direct and indirect employees that contribute to the company's operations, Dow employs 3,800 people in Argentina. As a key strategic industrial partner, Dow has invested more than \$2 billion during the last 15 years. Its strong performance resulted in sales of more than \$2.4 billion in 2014 and exports that surpassed \$600 million, strengthening Argentina's commercial balance and replacing imports with local production.

Conversely, how important is Argentina to Dow's global strategy?

Dow's subsidiary in Argentina is the company's sixth largest in the world, even though Argentina is the world's 24th largest economy. As a result, Dow Argentina is disproportionately represented in terms of Dow's business presence in Argentina. This is because the company operates in two key platforms of the Argentine economy. On the one hand, Dow is the third largest player in the agribusiness; while on the other, Dow is the largest and best-integrated petrochemical player in the hydrocarbon value chain, especially thanks to the company's plastics business. A third platform under development in Argentina relates to infrastructure and mining, for which Dow has both solutions and tech-

nologies.

Dow's success in Argentina is the product of the nexus among the country's own competitive advantages in the agribusiness and hydrocarbon industries, the alignment of Dow's core business with these two industries, and Dow's reputation and presence in Argentina.

How has Dow reacted to declining oil and gas production in Argentina?

Up until the end of the 1990s, Dow greatly benefitted from the abundant supply of competitive raw materials from Loma de la Lata field. Yet, when the production decline started, Dow had two options after suffering a series of difficult winters throughout the 2000s. Dow would either be part of the problem or part of the solution. Eventually, Dow took the informed and important decision to be part of the solution by partnering with YPF to be one of the first investment catalyzers in the upstream gas sector. In 2013, YPF and Dow entered into a joint venture by which Dow will fund the development of El Orejano, a Vaca Muerta gas field. The company has been carrying out a pilot to produce shale gas, which will contribute to an increase in the availability of gas in a key region for Dow. Currently, the area holds 38 wells in production, 21 horizontal and 17 vertical, and production reaches about 2,000,000 cubic meters of gas per day.

The potential of unconventional resources makes us think not only about Argentina's recovery of energy self-sufficiency, but also about a new era for the petrochemical industry. Natural gas and its value-adding potential, whether as fuel or feedstock for downstream processing, is an essen-

tial component in the development of advanced manufacturing industries. When used as a chemical feedstock, natural gas creates additional value as much as eight times the value of the gas itself.

The availability of resources enhances Dow's opportunities in the country. With high-quality and abundant feedstock, Dow will be able to think bigger, to continue expanding its presence in Argentina, and to conquer new markets. Dow anticipates that this additional supply will allow the company to keep a competitive cost position as well as strengthen its position to generate a positive return on investment.

What impact would a shale revolution have on Argentina's petrochemical industry?

To understand the impact of a shale boom on Argentina's economy, it would be useful to recall the impact that such a boom had on the petrochemical industry in the United States. From 2007 to 2009, petrochemical facilities were shutting down in the United States and companies were thinking about moving operations to other regions, such as the Middle East. Now, the American petrochemical industry has \$140 billion worth of investments in more than 100 ongoing projects, has created 700,000 connected jobs, and will move from a trade deficit in petrochemical products to a surplus of \$30 billion by 2018.

When compared to Argentina, the United States has a population that is seven times bigger and an economy that is 32 times larger. And yet, the shale resources of the United States are 82% the size of Argentina's. Moreover, the vast majority of these resources are located in Neuquén, whose

advantages include abundant water resources, a century-old hydrocarbon industry, connection with pipelines and, unlike some areas in the United States, relative under-population.

The impact of the shale boom in the United States had a profound impact on its petrochemical industry, but imagine the impact that such a boom would have in Argentina, where the ratio of resources to economic output and population is much larger. Even if Argentina underachieves, the impact could still be massive.

What impact would a shale revolution have beyond Argentina's petrochemical industry?

The multiplier effect of industrial resources, added to the production of unconventional hydrocarbons, may be represented by four "waves" of investment and industrialization that expand through the petrochemical production value chain: hydrocarbon production, petrochemical industry development, manufacturing byproducts and research and development (R&D).

The first is the most basic instance of resource reutilization: shale gas extraction and production. This introduces large amounts of raw material into the system. During the second stage, the extracted gas is used to maximize basic industries, such as petrochemicals, which benefits from the constant supply of raw materials used in production plants allowing it to generate supplies used by other industries. The third stage involves an extra step in resource industrialization by engaging companies that invest in new energy plants and manufacturers of byproducts in the primary sector, such as plastic transformers, container producers, and other manufacturers. This stage adds yet another layer of value to the raw material and contributes to the generation of products for mass consumption. The fourth stage focuses on establishing and strengthening R&D centers that can continue to explore new technologies and provide workforce training. This stage will

allow Argentina to achieve its full reindustrialization potential and make the most of raw materials to the benefit of the production chain as a whole. Going through each of these four stages requires a coherent plan and policies that will assure a continued gas supply and promote industrialization by preventing the exclusive use of natural gas during the primary stage.

What will Dow's leadership look like in Argentina in the years to come?

In 2015, Dow launched seven sustainability goals to help redefine the role of business in society. The first goal aims to lead the development of a societal blueprint that integrates public policy solutions, science and technology, and value chain innovation to facilitate the transition to a sustainable planet and society.

Pursuing sustainability means that future generations will be better off as a result of our decisions. Many well-meaning business, government and societal stakeholders around the world are working toward sustainability through individual actions, but we have not yet all come together to define and deliver a coordinated blueprint. On a path to a sustainable society and planet, efforts must be combined into one proactive, comprehensive strategy and implementation blueprint.

Dow is committed to helping lead this transition. As the world leader in combining the power of science and technology to passionately innovate what is essential to human progress, Dow will advance sustainability by collaborating at the intersections of business, government and society – with everyone from customers, suppliers and other industry stakeholders, to governments, non-governmental organizations (NGOs), educational institutions, communities and civil society.

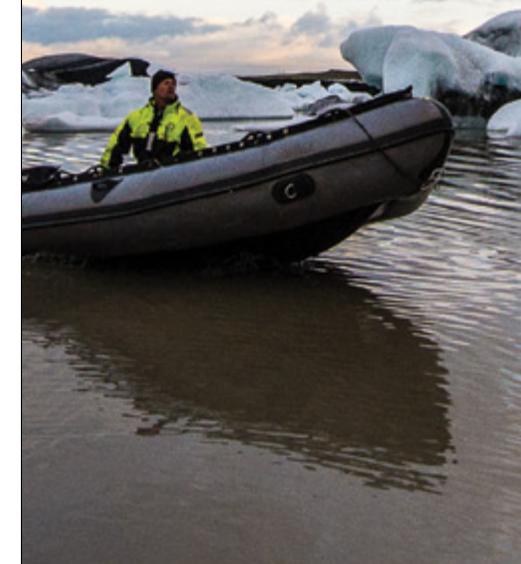
Recalling the abundance of Argentina's unconventional resources and Dow's early participation in their development, I cannot think of a country where Dow is better poised to lead the blueprint. —



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Petrochemical Plants

① **Bahía Blanca Area**

- PBBPolisur S.A.
- PROFERTIL S.A.
- YPF S.A.

② **Ensenada Area**

- MAFISSA
- PETROKEN S.A.
- YPF S.A.

③ **Gran Buenos Aires Area**

- ATANOR S.C.A.
- INDUSPOL AISLACIONES S.R.L (Junín)
- PETROQUÍMICA ARGENTINA S.A. (San Miguel del Monte)

④ **Campana - San Nicolás Area**

- ATANOR S.C.A.
- BUNGE ARGENTINA S.A.
- CABOT ARGENTINA S.A.I.C.
- CARBOCLOR S.A.
- CARBOQUÍMICA DEL PARANÁ S.A.
- DAK AMERICAS ARGENTINA S.A.
- PETROBRAS ARGENTINA S.A.

⑤ **San Lorenzo - San Martín Port - General Lagos Area**

- AKZO NOBEL ARGENTINA S.A.
- ARAUCO ARGENTINA S.A. (Chemical Division)
- DOW QUÍMICA ARGENTINA S.A.
- EVONIK METILATOS S.A.
- PETROBRAS ARGENTINA S.A.
- STYROPEK S.A.
- VARTECO QUÍMICA PUNTANA S.A.

⑥ **Rio Tercero Area**

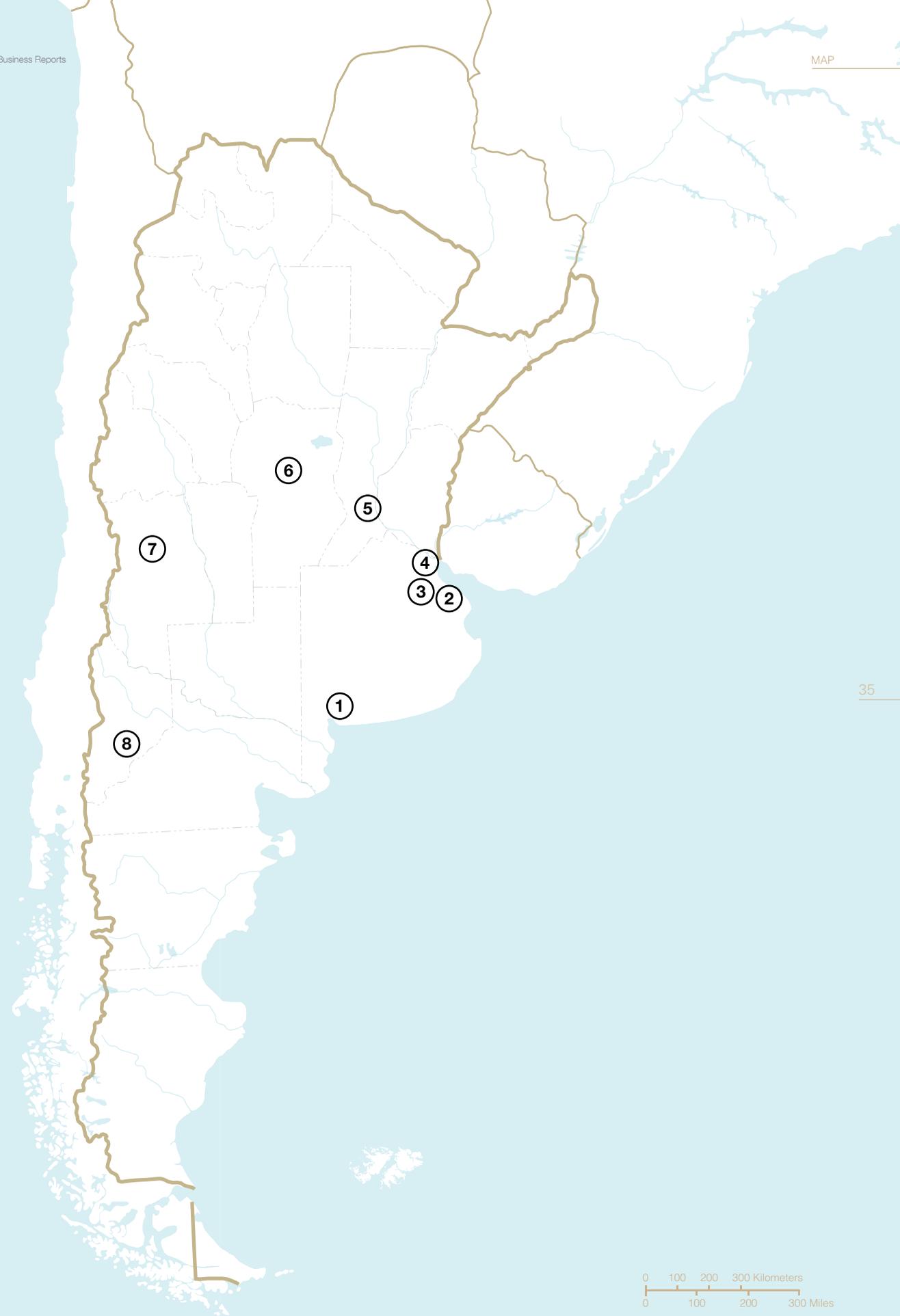
- ATANOR S.C.A.
- FÁBRICA MILITAR RIO III
- PR. III S.A.

⑦ **Luján de Cuyo Area**

- PETROQUÍMICA CUYO S.A.
- YPF S.A.

⑧ **Plaza Huincul Area**

- YPF S.A.



Márcio Sanitá de Azevedo & Emilio Nager



MSA



EN

MSA: General Manager

EN: Commercial Manager

BRASKEM ARGENTINA S.A.

A conglomeration of companies became Braskem in 2002. Can you provide some background about Braskem's presence in Argentina?

Braskem inaugurated a branch in June 2005, but the company's relationship with the Argentine market began with distribution before opening a local office. For example, Ipiranga, a predecessor company, had distributed polyolefins in Argentina since 1995. Three of Braskem's five business units are basic petrochemicals, polyolefins, and vinyls. The Argentina office is the first one inaugurated outside of Brazil, and it is a part of the polyolefin business unit. The Buenos Aires-based office is responsible for serving polyethylene (PE) and polypropylene (PP) clients in Argentina, Paraguay, Uruguay, and Bolivia. Braskem also exports benzene and polyethylene to Argentina, but the Argentina office does not handle this. Braskem does not export vinyls to Argentina since a local producer fully supplies demand.

Braskem is the largest PP producer in the Americas and is the largest PE producer in Latin America. In Argentina, polyolefin sales are slightly more balanced towards PE than PP.

How important is Argentina to Braskem's global sales and long-term strategy?

In recent years, Argentina has represented between 15% and 20% of export volume produced in Brazil. Braskem also produces in the United States and Europe; this production is not however exported to South America.

Argentina has always been an important market for Braskem, even throughout the ups and downs of the Argentine economy. Braskem has maintained Argentina in its long-term strategy in light of the integration

between Argentina and Brazil through Mercosur and of the presence of several important plastics converters. As an example of the integration between the Brazilian and Argentine petrochemical industries, Braskem imports naphtha from Argentina and exports back polymers. For Brazil, Argentina is a natural market and Braskem tries to see Argentina as an internal market.

Braskem brought Green Plastic to the Argentine market and has introduced certain applications for Green PE, or PE produced from sugarcane ethane. How receptive has the Argentine market been to Green PE?

At Argenplas, an international plastics trade fair, Braskem presented the application of Green PE in the packaging of Sussex Tendencia, an Argentine brand of paper towels. Green PE has a different value proposal compared to naphtha-based PE. It is a niche product with a different approach regarding volumes and pricing. When Braskem evaluated expanding the reach of PE in South America, Argentina stood out as a receptive market where packaging for products like diapers and paper towels already used Green PE.

Part of Braskem's strategy includes expanding in selected international markets and finding new business opportunities. The Ethylene XXI joint venture in Mexico between Braskem and Idesa is a clear example of that strategy. Does Braskem foresee a project with an Argentine company on the scale of Ethylene XXI?

It is clear that the company's growth path is in the Americas and Braskem is always looking for opportunities in the region. The petrochemical industry is based on competitive and abundant raw material; Braskem would consider a joint venture or some other form of a project in whichever country where these two factors are present. Argentina is an attractive country for Braskem. For example,

Braskem tried to acquire Solvay Indupa, an Argentine producer of PVC and soda, but the Brazilian competition authority blocked the transaction. Moreover, the opportunities created by the development of the country's unconventional resources have certainly been on Braskem's radar.

In Argentina, Dow manufactures polyethylene, while Petroquímica Ensenada and Petroquímica Cuyo manufacture polypropylene. Who are Braskem's clients in Argentina?

Braskem's customers include companies that wield most kinds of plastic converting technology: injection molding, blow molding, stretch film, blow film, and biaxially oriented PP. Braskem's profile of customers is the same as its local competitors, but Braskem aims to act as a local supplier. Sometimes Braskem vies for customers with local producers, and sometimes shares customers with them. Braskem's main competition strategy is to act as a local player.

YPF has outlined a goal to lead the Argentine petrochemical industry towards self-sufficiency, including with regard to polyolefins. Does YPF's self-sufficiency strategy pose a risk for Braskem's polyolefin business unit in Argentina?

Argentine demand for PP exceeds domestic production capacity, so the industry needs PP imports from Braskem to continue to run smoothly. At the same time, Argentina has a trade deficit in high-density PE. Braskem expects to supply Argentina with PP and high-density PE for years to come.

What are Braskem's short-term plans for Argentina?

Braskem wants to grow in Argentina, and has already demonstrated its interest in establishing an Argentina-based plant through its attempt to acquire Solvay Indupa. Yet Braskem's growth within Argentina will depend on several market factors. —



Jorge R. Sampietro

General Manager

PETROQUÍMICA CUYO S.A.I.C.

Petroquímica Cuyo began manufacturing commodity polypropylene (PP) products branded as Cuyolen in 1988 and later specialty polyolefins branded as Cuyotec in 1999. What explains the timing of Petroquímica Cuyo's product offering?

In 1980, Petroquímica Cuyo contracted BASF technology to construct a PP plant with a capacity of 60,000 tons per year (TPY) that would take advantage of the propylene produced in YPF's Luján de Cuyo Refinery. At first, Petroquímica Cuyo produced solely homopolymers given the unavailability of ethylene. Homopolymers production began in 1988.

Petroquímica Cuyo expanded the company's product offering by securing ethylene from Bahía Blanca and San Lorenzo throughout the 1990s, as well as the technical support of Novolen to replace the

plant's former catalyst with a PTK catalyst in the late 1990s. Petroquímica Cuyo is now able to produce the following products: homopolymers, impact copolymers, random copolymers, high-rubber PP, random copolymer type 3, and a high-speed, low-water carryover grade of PP for extrusion. The company can also produce terpolymers and random block copolymers, though these two products are not now commercially available.

In 1988, Petroquímica Cuyo's production capacity was 60,000 TPY and has now grown to 130,000 TPY. In 2015, Petroquímica Cuyo's utilization rate will be 97%, with PP production approximating 125,000 TPY.

The plant can run at almost 100% utilization rate, since YPF's Luján de Cuyo Refinery and three other minor basic raw material suppliers provide a reliable and abundant source of propylene. In 1990, the refinery supplied 70,000 TPY of propylene; in 2015, it will supply almost 100,000 TPY.

Who are the main PP consumers in the market and how fast will this market grow in Argentina?

Some of the most important plastic transformers in Argentina include Mazzieri & Cía, the largest raffia manufacturer in Argentina; BOPP Argentina, a bio-oriented PP films producer; DNS, a fiber manufacturer; Ferva Dema, a pipe and fittings manufacturer; and Emeplast, an injection molder. In the 1990s, Petroquímica Cuyo exported about 30% of its production. Yet, as the Argentine market developed, exports diminished.

Braskem's PP production capacity in Brazil is almost two million TPY, whereas Argentina has a total production capacity of 310,000 TPY, looking at Petroquímica Cuyo and Petroken combined. How significant is the PP competition from Brazil?

If the Brazilian economy continues to slow down, Brazil will face an oversupply of PP that will be exported to Argentina and other countries. Therefore, we foresee an increase in Brazilian exports to Argentina, al-

though the Argentine producers will strive to remain competitive. Nevertheless, more competition will undoubtedly be healthy both for the Argentine economy and for the development of local plastics markets.

How important are Cuyolen and Cuyotec as brands for the successful commercialization of the company's products?

Customers associate those brands with the assurance of high-quality products and technical service, as well as with the company's commitment to the development of product grades that meet the industry's ever-changing needs. Petroquímica Cuyo has developed close relationships with the company's customers, helping them select new machinery and developing new grades needed to run that equipment. Therefore, we strongly believe that Cuyolen and Cuyotec are very well positioned brands that will remain in the market for many years to come.

Due to the lack of U.S. dollars in Argentina's Central Bank at the time, YPF was unable to complete a deal by which it would have acquired 50% of Petroken and 46% of Petroquímica Cuyo in late 2015. However, if the deal were to be completed in the future, what would be the impact of this kind of market consolidation on Argentina's petrochemical industry?

It is very difficult to comment on the eventual impact of a deal that has recently fallen apart due to YPF's inability to make effective the necessary payments on due time and which, in my opinion, is not very likely to be put back to life. Certainly, the economies of scale fostered by such a consolidation could facilitate the development of a project for the construction of a new PP plant that would ensure the supply of domestic demand and generate export availabilities. However, a possible new PP plant project, to be completed no sooner than five to eight years from now, should be based on a Propane Dehydrogenation unit that might utilize as raw materials the natural gas liquids to be produced, in the future, from the development of Argentina's unconventional oil and gas resources. —



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Hugo Tormo

General Manager
COMPANIA MEGA



Could you provide us with an overview of Compania Mega from its founding in 2001 to where the company is today?

Compania Mega is an Argentinian producer of ethane, propane, butane and natural gasoline. The investment in implementing the whole project amounted to \$720 million. We have two complementary plants connected by a pipeline; our natural gas separation plant is located in Loma La Lata in the Neuquén basin, while our fractionation plant, storage and loading facilities are in Bahía Blanca.

The initial strategic reasons behind establishing Compania Mega sixteen years ago remain in place today. Our shareholder YPF, with a 38% stake in the company, supplies our raw materials from its production fields in the Neuquén basin; Brazil-based energy company Petrobras, which holds a 34% share in the company, assures a source of long-term supply of LPG and natural gasoline, within the framework of the Mercosur trade integration; while Dow Argentina, which holds the remaining equity in Compania Mega, secures an additional ethane supply that allowed the expansion of PBBPolisur, strengthening the Argentine petrochemical industry's supply of raw materials. During the last fifteen years, Compania Mega has contributed significantly to Argentina's commercial balance.

Could you tell us about the main petrochemicals produced by Compania Mega and its market share?

Compania Mega supplies the domestic petrochemical industry with approximately two-thirds of its ethane requirements. Overall, our production amounts to around 630,000 tons per year (tpy) of ethane, 350,000 tpy of propane, 200,000 tpy of butane and 100,000 tpy of natural gasoline.

Our exports are approximately 230,000 tpy of propane, 80,000 tpy of butane and our entire natural gasoline production. Our exports have decreased over time as a result of restrictions on raw material consumption in winter and increased sales to supply the domestic market. In winter, Compania Mega's facilities operate at around 70% capacity. Large companies across Argentina have to give priority to domestic consumption of gas for heating homes.

Could you outline the infrastructure upgrades required for Compania Mega to remain competitive as a petrochemical manufacturer?

We are seeing some bottlenecks in terms of our pipeline and our two processing plants. We therefore need to invest in expanding our processing capacity so that the company can expand its operations in line with increasing production in Neuquén. We are currently analyzing a plan to increase our production capacity by 50% by installing a third turboexpander train at our Loma La Lata site and to eliminate the bottlenecks.

What environmental management systems and processes does Compania Mega have in place and how important are sustainable operations to the petrochemical industry in Argentina?

Our integrated management system is based on our ISO 9001, ISO 14001 and OSHAS 18001 certifications. Compania Mega is focused on maintaining the best performance processes and the lowest environmental impact. We have made several modifications to the plant's original design aimed at reducing our energy consumption and gas emissions.

What do you expect for Argentina's petrochemical industry in the medium

term, in the context of local economic reforms?

Argentina is working to reverse its energy deficit. Companies have benefitted from an important change downward of rates of export duties and the normalization of the peso/dollar exchange rate. However, Argentina's current policy of holding domestic butane prices at an artificially low level, of around 40% of export prices, is challenging. We feel the current government understands the business community and this is encouraging. Looking ahead, the industry as a whole is starting to see the way forward for larger players to invest in new developments to increase the country's gas supply and, as a result, increase the supply of petrochemical products. We are optimistic and we have already seen signs of this investment as one of Argentina's main industry players announced its initiative to double its local petrochemical production and its participation in upstream activity.

With the opportunity to develop Argentina's unconventional resources on the horizon, what can we expect for Compania Mega in the future?

I foresee a great future for Compania Mega. We have supportive shareholders who are actively trying to improve Argentina's energy matrix; we possess relevant technologies and modern plants; we are strategically located; we have highly qualified personnel trained in the latest safety standards; and we have a strong network of service suppliers underpinning our operations. Two years ago, as part of the company's strategic planning, we modified our vision for the future. Compania Mega aims to be an essential protagonist in the processing of new gas production in the Neuquén basin and a reference for the oil and gas and petrochemical industries.

Daniel De Nigris

Lead Country Manager

**EXXONMOBIL EXPLORATION
ARGENTINA**



ExxonMobil's affiliates have been present in Argentina for over 100 years. Please describe ExxonMobil's past and current involvement in Argentina?

It has been a privilege to be a business partner with Argentina for more than 100 years. While the business has changed over time, Argentina has remained an important country in the ExxonMobil global portfolio. Here, we've been involved across the upstream, downstream and chemicals businesses, as well as business services. Right now, our upstream operations are a key focus in Argentina. We recently announced a pilot project in our Bajo del Choique-La Invernada block in Neuquén province, in the Vaca Muerta formation. According to the International Energy Agency, the Vaca Muerta holds the world's second-largest shale gas resources and the fourth-largest shale oil resources, and that means there's certainly a lot of international attention on this area and discussions about how to commercially develop it.

In addition to the pilot project, we are a partner in several other blocks, including Los Toldos, Loma del Molle, Pampa de la Yeguas, Sierra Chata and Parva Negra.

As mentioned before, we also have a large Business Support Center, which many people may not be aware of. It is located in Buenos Aires and is part of a larger ExxonMobil global network of centers. It provides important human resources, tax controllers, information technology, procurement and other supports to ExxonMobil affiliates in the Americas, Europe and Africa. It was established in 2004 and now employs around 1,600 highly qualified people.

In 2015, the government of Neuquén approved ExxonMobil's investment plans for the Vaca Muerta and this year CEO Rex Tillerson met with new Argentine President Macri, encouraging speculation that ExxonMobil may ultimately invest \$10 billion dollars in shale extraction. What is the likely timeline on this investment?

The approval of the pilot project by the provincial government of Neuquén was great news for us. I have to say that the Neuquén province has demonstrated its commitment to developing the oil and natural gas sector, and we have been pleased by its focus on creating an environment that encourages investment.

The pilot project is a five-well program that will also include early production facilities, a gas pipeline and an oil terminal. It is a joint venture with Gas y Petróleo del Neuquén. We started drilling the first well in late August. We expect that the horizontal leg of the

wells may reach up to 2,500 meters, the longest horizontal wells drilled in Vaca Muerta to date.

We first drilled in the block in 2013 and 2014, and we were very encouraged by the impressive results we achieved. The pilot project will help us build on those results so that we can continue to assess the productivity and recovery of the formation in the hope of eventually developing a commercial project.

XTO Energy is providing operational support for this project, and brings many decades of experience and expertise.

In recent years we have witnessed the United States leverage its natural gas advantage to stimulate its chemical industry. Some commentators have even called this phenomenon a hydraulic fracturing-led "manufacturing renaissance." How can Latin America – or Argentina specifically – get there?

That is a great question and it highlights a real success story that has unfolded over the past few years in the United States, where, by some estimates, there are about \$150 billion in chemical industry projects announced or in the planning phases across industry. That scale of investment has an immense capacity to drive economic growth and development, and, as you mentioned, it has been enabled by the surge in domestic natural gas production and its associated liquids, primarily ethane.

Over the course of the next decade, the demand for chemical products is projected to rise by nearly 45%, or about 4% per year, driven by population growth, urbanization and an expanding economic middle class. Nearly three-quarters of that growth is expected to come from developing countries. Demand in Latin America is actually projected to outpace the robust global average, led by countries like Brazil and Mexico.

The chemical industry has a strong role to play for any region with abundant, competitively priced natural gas and liquids feedstock seeking to realize the full potential of its resource.

Ultimately, several factors will need to converge to ensure the highest probability of future success. If upstream development projects geared toward unlocking Argentina's abundant unconventional resources are successful, and if the right blend of policies and regulations are put in place with a focus on providing the stability needed to encourage investments with a multi-decade time horizon, then Argentina may indeed find itself well-positioned to contribute to supplying the chemical products that a rapidly expanding Latin American middle class, and indeed the world, demands. —

Javier B. Sato

Commercial Manager, Downstream
PETROBRAS



Could you provide us with an overview of Petrobras' petrochemicals segment and its operations in Argentina?

Though Petrobras has been present in Argentina since 1993, the company entered the petrochemical and refining business in Argentina when it bought Perez Companc and PeCom Energía in 2002. Petrobras Argentina is the country's exclusive producer of various petrochemicals that include styrene monomer, polystyrene, styrene butadiene synthetic rubber and bi-oriented polystyrene at its petrochemical facilities in San Lorenzo and Zárate. At San Lorenzo, Petrobras produces 160,000 metric tons of styrene per year (mty) and about 55,000 mty of elastomers. At Zárate near Buenos Aires, the company produces 65,000 mty of polystyrene and 12,000 mty of the same at a smaller bi-oriented polystyrene plant that produces 12,000 mty.

The production of styrene monomer is Petrobras's most integrated business in Argentina;

the company produces part of its own benzene and ethylene and has in-country polystyrene and SBN plants. Apart from that, Petrobras supplies the markets in Argentina with expandable polystyrene, polyester resins, resins and emulsions. Petrobras can also supply Chile, Uruguay, Bolivia, and Paraguay with its integrated styrene monomer plant. When running at full capacity, Petrobras Argentina's petrochemical plants can supply both Argentina and the Southern Cone. Petrobras's petrochemical unit has 363 pump stations and processes all of the crude oil produced by the company's E&P division at its refinery in Bahía Blanca. Petrobras also buys and refines crude oil from other producers.

What is the greatest challenge for Petrobras's styrene monomer plant in Argentina?

Wintertime conditions pose significant problems for Petrobras's styrene monomer plant in Argentina as households compete with refineries and petrochemical plants for natural gas and LPG. Households need it for heating and petrochemical plants need it both for producing steam and as a raw material. The winters of 2012 and 2013 were particularly challenging since household demand for natural gas was particularly high and the government prioritized supplying households with natural gas before refineries and petrochemical plants. Petrobras had to power its styrene monomer plant with other fuels, which are less efficient.

Where will Petrobras direct its investments in its Argentine activities?

Although only six percent of Petrobras's revenue is generated by our operations outside of Brazil, and less than six percent of our new investments will be dedicated to external activities, Petrobras will continue to invest around \$700 million a year in Argentina. About seven percent of Petrobras's total investments will go to the petrochemical and fuel division over the next few years, but most investments will go to the company's E&P division. Investments in Petrobras's

petrochemical assets will mostly serve to sustain current operations rather than growing them.

Competitive raw materials are vital to the company's petrochemical business in Argentina as the company exports much of what it produces in the country. Cheaper natural gas leads to cheaper products, such as ethylene and benzene. Before thinking about expanding operations like those in our styrene monomer plant, for example, the company must first secure cheaper feedstock.

What role will Petrobras play in the development of Argentina's petrochemical industry?

Petrobras does not have specific plans to expand its petrochemical business within Argentina. Although the company plans to invest in oil and gas production, we will maintain our petrochemical division in the country at its current size and scope. Regardless of the owner, Petrobras's current petrochemical assets will continue to thrive because Argentina needs our products. Were these assets to cease activity, Argentina would have to import these products.

What kind of growth does Petrobras see in the Argentine petrochemical industry?

Petrobras believes that the petrochemical industry will grow in Argentina. Home to the world's second largest shale gas reserve and fourth largest shale oil reserve, the country is set to have a secure supply of feedstock. With proper government and administration, the country will develop those resources. The petrochemical industry will subsequently be in a position to compete successfully against major petrochemical-producing countries such as the United States and Russia.

Argentina can become a major supplier of petrochemicals to South America if the country succeeds in manufacturing low-cost products. Dow's belief in Argentina's petrochemical potential has motivated it to invest in the upstream sector to secure a steady stream of feedstock necessary for the long-term viability of its petrochemical activities in Argentina. —

Alfredo B. Fernández

General Manager
CARBOCLOR S.A.

10 words: With a 300 meter dock on the Paraná de las Palmas River, Carboclor upgrade storage facilities

40 words: Carboclar is a Latin American leader in the production of oxygenated solvents and octane enhancers. By integrating production and logistics units, the company hopes to gain a competitive advantage that will allow it to maintain its dominant market share.

Please provide us with an overview of Carboclor's operations and facilities in Latin America?

Carboclor was founded in 1968 as a petrochemical company and has become the main isopropyl alcohol (IPA) manufacturer in Central and South America. The company provides reception, storage and shipment of chemicals, in addition to logistics and distribution services. Our production plant is located in Campana, on the shores of the Paraná de las Palmas River in Buenos Aires Province, Argentina, which has given the company several geographic advantages, such as a 300 meter dock port that can receive offshore vessels. Moreover, Carboclor is three kilometers (km) away from national route 9 (Panamericana), which facilitates road transportation between the plant and the rest of South America.

Carboclor has been focusing on the expansion of its logistics and port services. Please tell us more about increased storage capacity at the port?

The company started evaluating the expansion of its port and logistics services in 2012 and completed part of this expansion at the end of 2015. Carboclor now offers the storage of liquid petroleum gas (LPG), offering four tanks with a combined storage capacity of 2,600 cubic meters (m3), bringing our total storage capacity to 120,000 m3. Both third parties and Carboclor itself will benefit from the new LPG storage services. Carboclor already offers the rental of petrochemical and chemical tanks, which range from 500 m3 to 1,500 m3 in terms of storage capacity.

What is the strategic importance of Carboclor's logistics business unit?

The integration of Carboclor's production and logistics business units gives the com-

pany a competitive advantage. Many of Carboclor's products are shipped in bulk and in drums to different destinations. Its integration with a logistics business unit makes it economically feasible to transport products whose transportation would be otherwise difficult to outsource. The increase of waterway transportation would also significantly reduce freight costs. Carboclor's proximity to a deep river like the Paraná River would allow the company to transport more volumes at lower costs.

Which industries will be Carboclor's main growth drivers in Argentina?

Carboclor's products include diluents, solvents, and other chemicals for paints and dyes. We will benefit from the development of interconnected industries such as the automotive industry and we anticipate growth in the pharmaceutical industry. Sales to the Argentine market constitute about 70% of our revenue in country, while exports comprise the remainder. Argentina's general industrial performance is therefore a main driver of growth for Carboclor.

Can you describe Carboclor's competition with regard to its production and logistics business units?

Carboclor separates itself from the competition by offering distribution services to diverse markets. We also face competition in the IPA sector from American and Brazilian producers, although we do hold 40% of the Brazilian market. Competition also depends on the commodity price environment. When commodity prices are low, competition is fierce. In spite of this, Carboclor has succeeded in tripling sales of a special type of IPA destined for the Brazilian pharmaceutical market.

What plans does Carboclor have for the next three years?

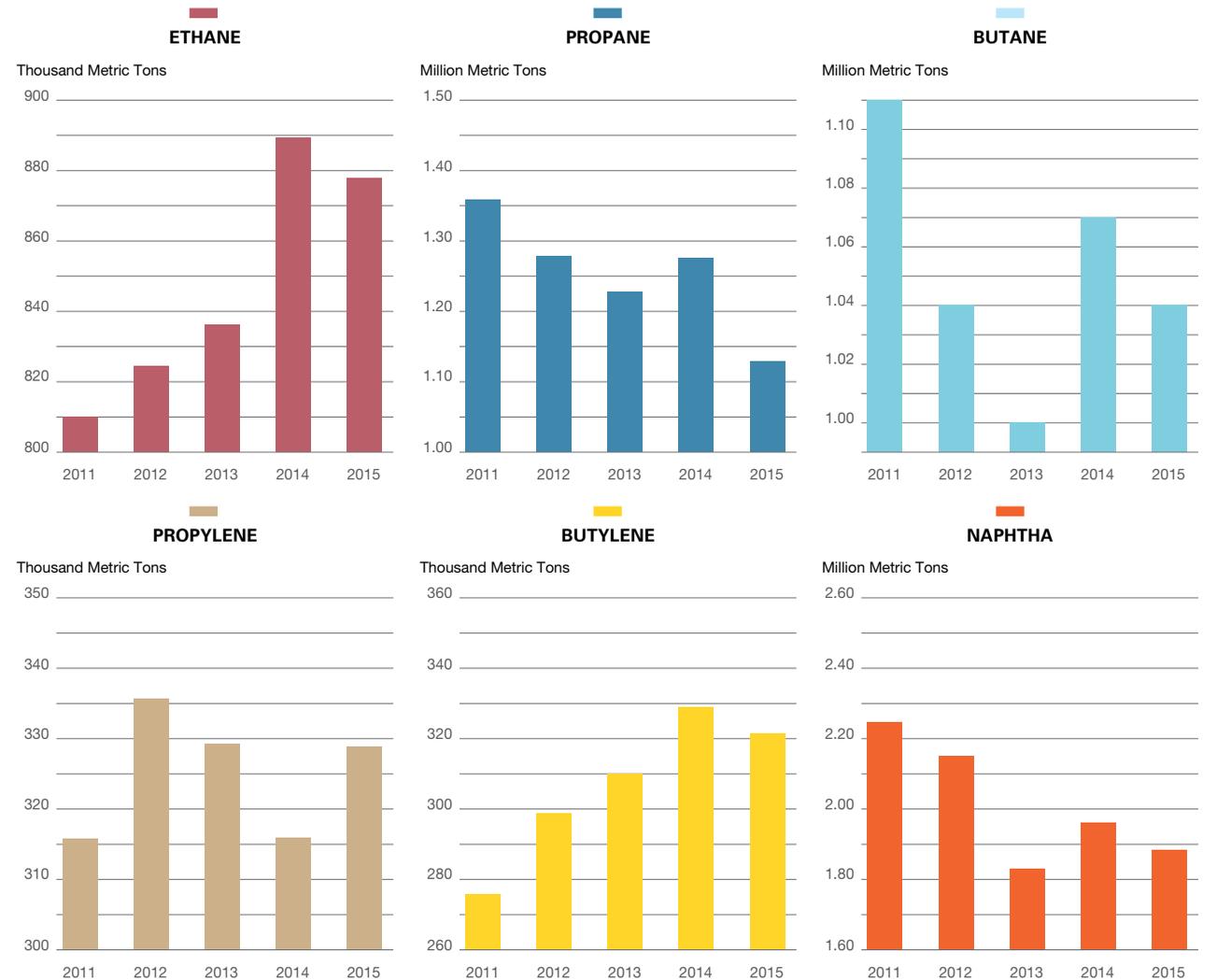
Carboclor will focus on improving plant technology and optimizing costs. The company is a Latin American leader in the production of oxygenated solvents and octane enhancers. A leading company like Carboclor must constantly seek to implement innovation in its processes and the most state-of-the-art technology to accompany market growth.



Image: Petroquímica Cuyo S.A.I.C.

PRODUCTION OF PETROCHEMICAL FEEDSTOCKS IN ARGENTINA

Sources: IAPG / IPA



Fernando Caratti & Matías Paz Cossio

FC: General Manager
MPC: Legal and Institutional Affairs Manager
REFINOR

Could you explain the reason behind Refinor's formation in 1992 and how the company has evolved since that time?

Refinor (Refinería del Norte S.A.) was established in December 1992 as part of the YPF privatization process. The Campo Durán refinery and its gas processing facilities, both located in the Northwest basin, together with 1300 kilometres (km) of pipelines up to Córdoba province, made up Refinor at that time.

In 1994, the company was encouraged to join the retail market and created a network of service stations. By 1999, Refinor had a 20% share of the Northwestern market; today, the company is the second-largest player in the region. Refinor has made several investments in recent years, such as in the reforming unit, in LPG storage and dispatch facilities, a new isopentane unit, and in new compression facilities in



FC

order to improve our capacity to import Bolivian gas.

Argentina's chemical industry saw a turning point in 2011, when it became a net importer of raw materials. Could you tell us more about Refinor's role in this?

When Argentina's gas production decreased at the start of the decade, this was felt even more dramatically in the Argentine Northern basin. The possibility to increase gas imports from Bolivia was a good opportunity for Refinor, considering our strategic location and, since then, the company has started to process Bolivian gas to make up for the decrease in domestic gas production.

Where do you expect to see Refinor by the end of the decade?

Because we are operating at one third of our production capacity, it is necessary to focus our activities towards higher-margin profit channels while being cost competitive. The foundation for our success lies in our approach to the client, our product differentiation and quality, and our service provision. Our strategy will be based on opening more service stations in the region's urban centres, as well as in those areas where other companies do not have service stations. We also hope to work with the government on the possibility of increasing the northern basin exploration activities to improve our access to raw materials. With the reactivation of the railways, we will also have access to feedstock from other regions. —

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REFINOR



Santiago Sacerdote

General Manager
YPF TECNOLOGÍA S.A. (Y-TEC)

How did the idea of Y-TEC come about and how has the project been unfolding?

The company is an association between YPF and the National Scientific and Technical Research Council (CONICET). The idea to create Y-TEC came from the need to build relationships between the private, public, and research sectors. It is a concept that the CONICET had thought about applying in different sectors, including biotechnology, energy, microelectronics and health. When YPF was nationalized, a researcher named Eduardo Dvorkin published an article making the case that Argentina needed to develop its own technology. President Fernández read the article and the idea of creating a national company dedicated to developing technology for the energy industry was born. Materializing an idea such as this was unprecedented

in Argentina, not because this was the first company with CONICET's involvement but because we were not prepared from a cultural perspective to be involved in a company the way that it is now with Y-TEC.

YPF provides Y-TEC with capital and leadership. Could you describe the relationship you have with YPF?

When we created Y-TEC we decided that the strategy and leadership of the company had to be in hands of the private sector, which is why YPF owns 51% of the company. The business model is a joint venture between both the public and private sector that is aimed to capitalize on all of the country's research capabilities and applying them to find business opportunities. Our participation in the company is not minor as we still own 49% of the shares. In the original design, the challenge was to determine how CONICET's research would fit into the new company. In the last two years, we have been solidifying Y-TEC's business model and today, the company is fully functional. We are implementing a business model by which the entirety of CONICET's research capabilities is at the disposal of Y-TEC's projects. We are also about to inaugurate a new facility with the best equipment and technology available in the country to begin our research projects.

How fast has Y-TEC grown in terms of budget and personnel?

When Y-TEC was created, YPF's entire R&D team of about 75 people moved to Y-TEC. The philosophy behind the project was that Y-TEC become YPF's R&D branch. Today, there are over 300 researchers involved in Y-TEC's projects.

Being an independent company, will Y-TEC begin to commercialize its own products and look to become less dependent on YPF?

Yes, Y-TEC's plan is to commercialize products and become less dependent on YPF for revenue. We will look to support

Y-TEC's business around the six areas for which we will be developing technologies. If we identify an opportunity and have the capabilities to develop the technology needed, we will put together a project. We expect that these technologies complement each other and help Y-TEC's objective. We have defined some technical areas in which we want to specialize, which include: materials, synthesis processes, geosciences and other areas. Every project invites each of these technical areas to contribute their knowledge to reach the objective.

Being YPF's R&D branch, what kind of influence will other clients have in the development of new technologies?

Our commercial model is to patent new technologies and transfer those to clients. On top of R&D, we offer technical services that will bring us close to our clients. Our relationship with YPF is strong given that we know where its short and medium term strategic initiatives are headed. Y-TEC's aim is to anticipate the technologies that these initiatives will require. Our proposal is to promote consortiums. We hope to see cases in which a group of companies will present a technological challenge, a shared problem, for Y-TEC to find a solution. We also expect to partner with other technology companies and work together in finding solutions.

What would you identify as the biggest challenge facing the production unconventional resources, such as hydraulic fracking, in Argentina?

The challenge with developing unconventional resources is finding ways of making production more economic. You cannot achieve this with a single technology; rather you need to find the right combination. We need to have a better understanding of the geological characteristics of basins and the fracking process. Once you clarify what your objective is, which in this case is to develop technologies that contribute to reducing operating costs, you can identify what technical areas needed to reach it. —



SPECIALTY CHEMICALS



"Thermoplastics are strongly linked to GDP and, as this is expected to rise, so too will the demand for these products. Internal thermoplastic manufacture could easily replace the requirement for import; however, the manufacture of thermoplastics, such as polyethylene, requires an improvement in our ethylene infrastructure."

- Alfredo Friedlander,
Executive Director,
IPA

Specialty Chemicals

By Harriet Bailey

The specialty chemicals industry in Argentina manufactures a vast array of products from solvents and surfactants, to performance polymers and polyester resins. Such products have a wide variety of applications across a number of industries, including personal care, paints, and pharmaceuticals, among others. According to IPA president Ignacio Millan, the specialty chemical industry in Argentina has the potential to not only create new products, processes and services, but also to add value to commodity products, which typically see lower margins. “I believe investment opportunities in this field should be directed to those areas where the region has competitive advantages and vertical integration synergies such as in EOR, paints, composite materials, and detergents, among others,” clarified Millan. However, in spite of Argentine know-how in a number of these areas, the country lacks the feedstocks to work with; much of the country’s chemical trade deficit is due to imports of chemicals from this sector. “The problem in Latin America as a whole, not just in Argentina, is the lack of basic raw materials such as olefins and aromatics. We will not see companies investing in plastics, solvents or any other chemical plant if they do not have access to competitively priced raw materials,” explained George Martin, senior consultant at chemical consultancy ICIS.

This problem is only set to increase as a more stable economy, open to foreign investment, will require more performance chemicals to satisfy the needs of both consumers and industry. “Thermoplastics are strongly linked to GDP and, as this is expected to rise, so too will the demand for these products. Internal thermoplastic manufacture could easily replace the requirement for import; however, the manufacture of thermoplastics, such as polyethylene, requires an improvement in our ethylene infrastructure,” explained Dr Alfredo G. Friedlander, IPA’s executive director.

Specialty chemical company Meranol exports around 10% of its product to neighbouring countries Brazil, Bolivia and Paraguay, but expects to expand this market to Chile and Uruguay in the near future. It has a leading 45% share of the aluminium sulfate market as its competitors, Arquimia and Faisan, both import sulfur and are not vertically integrated. The company experienced 60x growth over the last two decades, and an increased consumption of aluminium sulfate for water treatment plants, combined with competitor BASF closing its sulfation plant in late 2015, should ensure the success of Meranol’s growth strategy. “Over the last two years, Meranol invested more than \$20 million in new products in the surfactants line, oriented towards production of H-LAS and S-LES. The aim with these new products is to double the present turnover and develop markets in the health and personal care sectors,” explained director general Rodolfo Perez Wertheim. Europe-headquartered chemical company Lanxess, meanwhile, produces performance chemicals in Argentina, in particular chromium salts for leather tanning. According to country manager Enrique Worman, being located in Argentina poses some distinct advantages; the country is known for its leather goods, providing a local market, while its plant in Zárate is the only sodium dichromate plant in Latin America, and one of only two Lanxess plants that produce the chemical worldwide. The leather business exports around 70% of its production, and Lanxess Argentina’s domestic sales only account for around 2% of its global total.

Green fingers

An area which Argentine companies may be able to capitalize on is in green chemistry. European markets in particular are exploring sustainable options as a result of consumer demand, but lack the space to grow crops for plant-based chemicals. Argentina’s high levels of soybean production suggests it could be a key competitor in the

space, while clients would feel confident in terms of sustained availability of the product. “We identified the chance for Varteco to grow in the bio-based plasticizer market because some companies are interested in non-phthalate and “green” options at competitive prices. We established a commercial affiliate in Barcelona and started to sell this bio-based plasticizer in Europe,” explained Diego Garcia Touza, director at Reagens Varteco.

Reagens Varteco was formed in 2014 from Argentina-based Varteco and Italy’s Reagens, combining the former’s knowledge of the regional market with the latter’s advanced stabilizers technology. The company is now building a plant to manufacture propylene glycol from glycerol, in partnership with Y-TEC and INCAPE, but it also sees the opportunity to create this chemical from bio-based chemicals. “Based on Varteco’s commodity chemicals business profits, we could develop new interesting bio-based chemicals businesses,” continued Touza. “I believe we could develop other interesting businesses from these chemicals, such as propylene and ethylene glycol based on glycerol use.”

Global players appear to be leading the way in terms of manufacturing products that cater to the increased requirement for sustainability. DuPont’s Juan Vaquer, president of the company’s Latin American operations, believes the region shows a propensity for bio-based materials: “We are now facing a new era in plastics, with the focus being the switch from petroleum-based to renewable raw materials. Our goal now is to produce bio-based polymers, while maintaining a high level of functionality and cost competitiveness... . DuPont’s scientists concentrate a great deal of effort on the development of bio-based products, materials and fuels. Reducing our dependence on fossil fuels is a mission we take very seriously, and bio-based products are mission-critical.”

Local player Plaquimet, which produces polyester resins and gel coats, aims to be a market referent for sustainable chemical use. It currently manufactures around 80 different resins for end markets including construction, infrastructure, transportation and energy, with its flagship product being the Polymet line of resins. The company is promoting the use of green chemicals among its clients and believes Argentina’s new administration can ensure it takes the

lead in green chemistry in the region. “We believe in a green world and take sustainability very seriously. We are following the policies being developed globally and the government is also implementing responsible practices in terms of the environment,” explained director Eric Engstfeld. “The entrance to South America is Argentina, particularly because of the new government’s more open policies.”

This is a sentiment with which Argentina’s Ministry of Production appears to agree. It carried out a study on future possibilities in

the sector with the Chamber of Industrial Chemicals and Petrochemicals, and came to the conclusion that investment of around \$30 million is required to ensure Argentina is at the forefront of specialty and performance chemical trends. Perez Wertheim of Meranol believes it is now up to the government to make good on this assessment: “Our industry, and the structural growth of the country, depends on the critical supply of energy and therefore the government will have to play a role in increasing its energy offering.”



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Rodolfo Perez Wertheim

Director General
MERANOL

Could you tell us about the recent most important areas of focus for Meranol?

Meranol has grown by 60 times since 1993, following diversification in our production strategy and our vertical integration with sulfur chemistry. In line with our strategy, we have invested more than \$20 million in our integrated sulfur plant, which now includes a new sulfonic plant H-LAS and pre-commissioning for a new S-LES plant. With this strategic production focus, Meranol aims to double its present turnover. The new plant will enable the company to quadruple its sulfonation activities, from 9,000 metric tons per year (mt/y) to 37,000 mt/y.

We are also working to expand our iron oxide plant. Over the last few years, our production has increased by 10%, but new investment in processing aims to see a further 40% increase. Meranol also produces aluminium sulfate and linear alkyl benzene sulfonic acid at its integrated plant in Buenos Aires.

In dollar terms, Meranol's net sales have increased by around 15% since 2012. What has been behind this growth?

Meranol has taken advantage of the surfactants market to increase our volumes, which prompted our recent investment to diversify production. Firstly, the El Niño Southern Oscillation (ENSO), which causes higher rainfall, led to an increased aluminum sulfate demand for water treatment. Secondly, the only producer of sulfation products in Argentina shut down their ageing plant, which opened up the market for Meranol. The installed capacity in Argentina for sulfonic acid is very important.

Which are the key markets for application of Meranol's products?

Meranol's products serve a wide array of applications and, thankfully, we do not depend on one particular sector. Sulfonic acid and alcohol sulfates are active ingredients that can be complementary or supplementary depending on the client's application. The new plants will see us becoming a key player in the home and personal care sectors.

What is Meranol's positioning in the local and export market?

Our two local competitors for aluminium sulfate are not vertically integrated. They buy sulfur in the market and they have to take the sulfuric acid market price into consideration for their cost of production. Meranol's vertically integrated strategy is therefore an advantage and positions us as a leader in the market with a 45% share. Export conditions in Argentina have not been favorable in recent years, however, a small part of our business has seen us exporting to neighboring countries. With our new sulfonation plant, we aim to export 10% of our production with opportunities in southern Brazil, Bolivia, Paraguay, Chile and Uruguay.

Meranol acts as a representative in Argentina for international companies. How do you choose which lines to represent?

We principally represent European companies for which we import and sell products, or act as a nexus with the local supplier

and consumer, and we get a commission. We choose companies that have complementary products to our business lines for market applications.

Where does Meranol see the highest costs for the company and how does it raise funds?

The chemical industry is capital-, raw material- and technology-intensive. In sulfation, raw material costs can reach almost 75%, whereas in sulfuric acid it is much less as this is a cheaper product, reaching 50% of costs. Meranol made a wise move and decided to invest in pesos for the new plant as we saw that things in Argentina were going to change. We have two options to finance; either via the banks, or our listing on the Buenos Aires stock exchange (BCBA).

Looking to the future, where can we expect to see Meranol in the next three years?

Meranol is following its policy of continuous growth. In the next three years, all of our projects currently underway or in the pipeline will be completed and consolidated. These projects include our new sulfonation and sulfation plants and our new aluminum sulfate plant in the Chaco province. This has a regional development focus on the water treatment business.

Do you have a final message for GBR's readership?

The Chamber of Industrial Chemicals and Petrochemicals, together with Argentina's Ministry of Production, carried out a study evaluating future possibilities in the sector. They reached the conclusion that there is an opportunity gap for investment of around \$30 million. Meranol will play a part in this by contributing our experience in the development of specific surfactants for those markets. Our industry, and the structural growth of the country, depends on the critical supply of energy and therefore the government will have to play a role in increasing its energy offering. —



Juan Vaquer

President
DUPONT LATIN AMERICA

Could you provide us with a brief overview of DuPont's operations in Argentina and its three business segments?

DuPont Argentina is a market-oriented science company delivering science-based solutions. The company has been operating in Argentina since 1937, when it built the first rayon plant under the name Ducilo. Since that time, DuPont has grown and expanded, not only in the textile industry, but also in areas such as refrigeration gases, engineering polymers, packaging materials and synthetic fibers. In 1990, the company adopted the international name of DuPont.

Currently, DuPont has more than 500 personnel in Argentina, and is headquartered in Buenos Aires. The company also has an office in Sante Fe province, an enzyme plant in Córdoba province, an engineering polymer plant in Buenos Aires province, a seed production plant in Salto, and an experimental station in Pergamino. DuPont is also present in numerous Argentine

provinces through its Agribusiness operations.

With a focus on your agrochemical solutions, what are some of your flagship products in this area, and how can DuPont play a role in advancing the agricultural industry in Argentina?

DuPont's offerings bring innovative science and solutions to meet the challenges faced by farmers both today and into the future. In that regard, being close to our customers is critical and we need to understand their current and future needs. Although developments are worldwide, our differential is to work closely with farmers, helping them deliver healthy and profitable crops.

Due to an increasing global population and the demands of a rapidly expanding middle-class for more and better food, a growing demand for grain and other agricultural products over the long-term is expected. At the same time, the world has limited areas of new land for farming, so it is imperative that we increase the productivity of every acre. Argentina's location and geography gives the nation an important competitive advantage in this regard.

Could you tell us more about DuPont's leadership in the bio-based polymers and photovoltaic technology sectors, and the advantages of using these types of materials?

DuPont aims to address sustainability both within the company – by decreasing our dependence on petroleum and recycling waste – but also by manufacturing products that enable our customers to improve their sustainability efforts. In terms of plastics and polymers, DuPont's innovation in this area stems from the development of nylon. We are now facing a new era in plastics, with the focus being the switch from petroleum-based to renewable raw materials. Our goal now is to produce bio-based polymers, while maintaining a high level of functionality and cost competitiveness. DuPont's scientists concentrate a great deal of effort on the development of bio-based products, materials and fuels. Reducing our dependence on fossil fuels is a mission we take very seriously, and bio-based products are mission-crit-

ical. The region is very efficient in bio-based materials and DuPont is working on new developments in this area.

Although the solar panel industry in Argentina is underdeveloped, it is an important business line for DuPont as demand is growing. We offer a broad portfolio of photovoltaics, as well as the materials used to manufacture the modules. We develop and promote proven materials such as Tedlar® polyvinyl fluoride film for the back-sheets that provide electrical and weathering protection for solar panels, while Solamet® metallization pastes drive higher efficiency and power output. Additionally, the frame of traditional photovoltaic modules is made with Rynite®. We conduct extensive laboratory and field testing on material performance to ensure they will stand the test of time in real-life conditions. DuPont itself owns and uses photovoltaic systems at several facilities worldwide.

What are some of the advantages of being a broad-spectrum chemical company in a developing region?

In today's competitive global marketplace, being an experienced company with two centuries of experience operating manufacturing facilities in more than 90 countries around the world is a great differential. Our long and solid history helps us attract and retain scientists and engineers with the broadest experience. DuPont invests \$2 billion in R&D annually and has a portfolio of hundreds of thousands of products. This is a great differential and certainly helps our customers maximize their business results by applying DuPont expertise, technology, and process knowledge.

Nowadays, these advantages are even more important due to the opening of our innovation and collaboration centers, such as our collaboration center in Buenos Aires. These are facilities designed to welcome partners to work with us jointly to generate solutions to challenging problems.

This kind of contact has proven to be of great value to our key partners as it gives them access to worldwide technology, knowledge and expertise synergies, helping pave the way in their own innovation processes. —

Eric Engstfeld

Director
PLAQUIMET



Could you tell us more about your main product lines and the end markets for these products?

Our Polymet resin line, which is our brand name for polyester resin, is very successful. All our products are tested and produced in compliance with international standards, so when big players need a product, they demand the Polymet line, which encompasses a large number of resins.

Your reactor is one of the largest in South America for manufacturing polyester. Could you tell us more about your facilities and training laboratory?

We have one of the biggest facilities for polyester manufacturing in Latin America. Plaquimet has also created a training laboratory for our customers and universities. Because these types of materials are relatively new both in the world and in Argentina, there is a need to train end users and professionals to adopt these materials. Plaquimet would be open to joint ventures because although we are locally established with an R&D laboratory, facilities, and professionals working towards developing new resins, we recognize that there are more experienced players than us in the global composites market with world-leading knowledge and technologies. —

Could you provide us with a brief overview of Plaquimet?

Plaquimet was founded in 1979 and we now have more than 100 employees. Our core business is in polyester resins and today we offer gel coats to complement these resins for the composites industry. The company has a separate unit that covers distribution of materials related to composites that are not produced by Plaquimet, such as fiber glasses, peroxides, and application equipment, among many other products. Approximately 70% of our turnover comes from polyester resins and gel coats, 20% comes from distribution products, and the remainder comes from our new unit for polyurethane.

Our main business is in Argentina, and to a lesser extent in Brazil, as well as other countries in the region.

Diego Garcia Touza

Director
REAGENS VARTECO



What effect has the opening up of the market had on plastics manufacturers in Argentina?

The change from one import/export system to another has left many chemical companies in limbo. CIQyP is in talks with the Ministry of Production and is trying to explain that some chemical businesses should be regulated with non-automatic licenses based on technical standards, as accepted by the World Trade Organization.

What can we expect for the chemical industry in Argentina in the future and how can Reagens Varteco play a role?

A particular area of interest for the future will be oleochemicals and bio-based chemicals. Companies in palm-oil rich countries, such as Malaysia, are buying companies in Europe. The main oleochemical business in Argentina is biodiesel, and we also have a good bio-based plasticizers business based on soybean oil. I believe we could develop other interesting businesses from these chemicals, such as propylene and ethylene glycol based on glycerol use. Based on Varteco's commodity chemicals business profits, we could develop new interesting bio-based chemicals businesses. —

Could you provide us with an overview of Reagens Varteco and why it was necessary for the two companies to align?

Reagens Varteco was formed in December 2014 from the union of Varteco, which has local knowledge and experience of working in Argentina and South America, and Reagens, which has advanced stabilizers technology. As part of the partnership agreement, Varteco brought its PVC stabilizer business to Reagens Varteco and, in return, Reagens provided the technology for a new plasticizer plant in San Luis, which started construction in January 2015. We expect to manufacture PVC stabilizers based on calcium-zinc and calcium-organic technology. It will be the first production of calcium-organic stabilizers in South America. Reagens is also providing all the technology related to formulation and manufacturing, which represents a big advance in terms of technology for Varteco.



Enrique Worman

Country Manager
LANXESS S.A.
(ARGENTINA)

Can you provide some background about LANXESS in Argentina?

LANXESS began operating independently in 2004, when Bayer spun off its chemicals division and parts of its polymers segment. Nevertheless, the Zárate plant was inaugurated in 1980. Globally, LANXESS has 10 business units that comprise the company's three business segments: performance polymers, performance chemicals, and advanced intermediates. From Argentina, LANXESS produces only performance chemicals but distributes products from the three business segments. In particular, LANXESS Argentina produces performance chemicals related to tires (Rhein Chemie) and leather.

In 2004, LANXESS spun off two businesses related to textile and paper, which prompted LANXESS's branches around the world, including Argentina, to undertake a realignment of the company's business units. In 2010, Rhein Chemie,

a business unit within the performance chemical business segment, acquired a family-owned Argentine company known as Darmex, which was focused on both the production of tire bladders and highly innovative release agents. LANXESS bought the company to become a global leader for release agents and to strengthen Rhein Chemie in Latin America as a production hub for tire manufacture. Release agents are used to prevent tires from sticking to either the bladder or mold in the curing process. Since 2010, LANXESS has provided this know-how to Brazil, the United States and China.

LANXESS' sales in Argentina total \$150 million, \$120 million of which stem from local production, with the remainder coming from distribution. Rhein Chemie exports about 85% of production and the leather business unit exports about 70%.

Where in Argentina does LANXESS have production sites?

LANXESS has three production sites that manufacture performance chemicals in Argentina, located in Burzaco, Merlo and Zárate. The production sites in Burzaco and Merlo came with the acquisition of Darmex; Burzaco manufactures bladders and release agents, while the latter manufactures mica, an important ingredient for the manufacture of release agents. The Zárate site manufactures tanning products and chromium salts.

In 2014, sales made in Latin America constituted about 11% of LANXESS' global sales. How important is Argentina to the company's global sales and strategy?

Sales made in Argentina constitute about 2% of global sales; however, the country is a key strategic branch for LANXESS globally. The Zárate plant is one of only two LANXESS plants that produce chromium salts for tanning. The Burzaco plant is one of Rhein Chemie's largest bladder plants and exports know-how to other plants. For example, LANXESS constructed a bladder plant in Brazil in 2012. The new Brazilian plant's operators all came to Argentina for training and Argentine operators frequently

travel to Brazil to address issues related to product quality and improvements. The Burzaco plant also received the operators of the bladder plant constructed in China, which was completed in late 2015. Finally, the Burzaco plant also provides technical assistance to the bladder plant that LANXESS acquired in 2012.

What are some of advantages and disadvantages of LANXESS's presence in Argentina?

LANXESS' presence in Argentina has some logistical advantages. Argentina is in the middle of the leather hub; Brazil, Uruguay, and Argentina are some of the largest leather producers in the world. Another advantage relates to Argentina's industrial know-how, as the Argentine labor force is highly qualified. However, one disadvantage is that Argentina is far from chromite, a raw material for chromium salts, which is mostly extracted in South Africa. Nevertheless, when compared to its competition, LANXESS is the only company that boasts back integration, owning its own chromite mine in South Africa.

Who are LANXESS' main competitors?

LANXESS has about 10 major competitors when it comes to tanning products, which is a capital-intensive business. However, LANXESS in Argentina mostly competes with other economies such as Russia, China, Turkmenistan and, most recently, Oman. The competitiveness of LANXESS in Argentina has much to do with variables such as inflation and exchange rates, the proximity of raw materials, and the quality of logistics. Another competitive challenge has been the cost of labor, which has increased in recent years since inflation has outpaced the devaluation of the peso against the dollar. The new government has already undertaken fiscal initiatives that have resulted in the devaluation of the peso against the dollar, which should make LANXESS' exports from Argentina more competitive. However, LANXESS in Argentina has a competitive advantage in that the Zárate plant is the only sodium dichromate plant in Latin America. —



AGROCHEMICALS



"Argentina has an incalculable potential, particularly in terms of the agricultural sector. The Argentine farmer is part of a value chain which has incorporated a range of technology in recent years, including in seeds, equipment and knowledge. They are now positioning themselves to be competitive on a global level, unlike other markets in Argentina which find it difficult to compete internationally."

- Mauro Piva,
General Manager,
Nova S.A.

Agrochemicals and fertilizers: enabling the growth of Argentina's agricultural industry

By Harriet Bailey

With the world's population set to grow to nine billion people by the middle of the century - spurred on by China's termination of its almost 40-year old one-child policy in 2016 - global food producers will be under increasing pressure to improve yields and use resources more efficiently. Argentina, as the world's third largest producer of soybeans, fifth largest producer of corn and tenth largest producer of wheat, could do both.

In a speech to farmers following the official announcement of the removal of agricultural levies in December 2015, President Macri showed his awareness of Argentina's potential to be the supplier for the increase in demand: "We have to go from being the breadbasket of the world to the supermarket of the world."

During the current government's four-year term, the intention is to intensify production from 100 million tons per year (tpy) to 160 million tpy - an increase of 60%. The impact of removing taxes on crops such as wheat and corn has already been felt, with output set to hit record highs by 2017. "We can expect wheat acreage to grow by one million hectares to around 4.7 million hectares; this will however still be lower than the six million hectares we have previously seen," said Ulrik Ekenon, south Latin America manager at Nufarm Argentina. "Argentina's corn production will increase by around 700,000 hectares to 3.4 million hectares."

Regional bodies are also aware of the role Argentina's agricultural industry can play in feeding an ever-increasing global population and, according to CropLife Latin America, Argentina and Brazil together

account for 50% of South America's agricultural exports. The organisation focuses on the crop science industry, and has 25 member associations from 18 different countries across the region. "We chose to hold the 2016 International Forum in Buenos Aires because we anticipated the change of government and the new opportunities for agriculture in the country as a result," explained the association's president, Jose R. Perdomo. "Argentina uses modern technologies in its practices, especially when compared with other countries in the region that do not have as much access to technology. It has been proven to be capable of delivering large-scale production at a low cost because of its high productivity levels."

Lobbying for change

Argentina's agricultural industry has a healthy relationship with the domestic agrochemical industry, whose products will be key in improving yields. Representing the interests of agrochemical companies across the spectrum, from multinationals, including Monsanto and Syngenta, to local players such as Agrofina and Gleba, are two organizations: the Chamber of Agricultural Health and Fertilizers (CASAFE) and the Chamber of Fertilizers and Agrochemicals (CIAFA).

CASAFE, in particular, focuses on promoting best practice and the responsible use of crop protection products to both regulatory bodies and the public. It has two programs in place to standardise practices in Argentina and to make good agri-

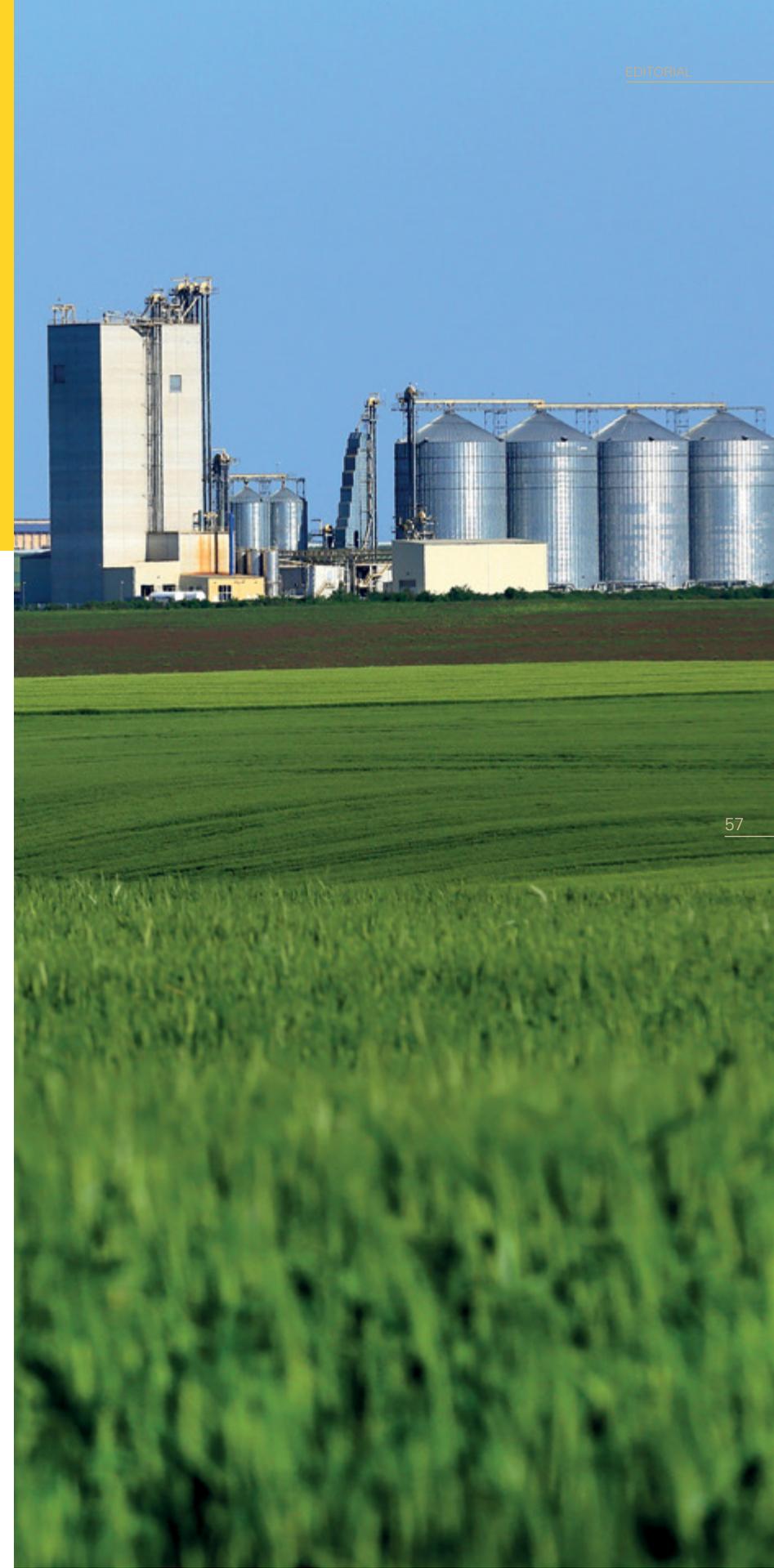
cultural practices the norm across the industry, the first being Deposito OK, which aims to certify facilities used for the storage of agrochemicals. "We have around 600 to 700 certified facilities in Argentina, which is around 50% of the total facilities in the country. The uncertified facilities are usually smaller, local sites; multinational companies will not sell their products to such facilities," explained Federico Landgraf, CASAFE's executive director.

CASAFE's second program is Agrolimpio, a program endorsing the globally recognized triple rinsing protocol of chemical containers and their subsequent recovery. CASAFE is ultimately lobbying government for a nationwide law to enforce the collection of these containers after use. Rotam Argentina, Dow Agrosciences and Rizobacter are also establishing a foundation to ensure the safe packaging and storage of agrochemicals. "When agrochemicals are properly applied and containers are disposed of correctly, there is no problem; however, when the correct procedures are not followed, toxic material can leach out into the environment and pose a danger to human health," explained Rotam Argentina country manager, Javier de la Rua.

CASAFE typically represented the interests of multinational companies in Argentina. With the government's recent appeasement of the industry, the opportunity for growth may mean more international players decide to expand their operations in the country. Global corporations also bring with them global standards, which should work in CASAFE's favour when seeking increased governmental, as well as

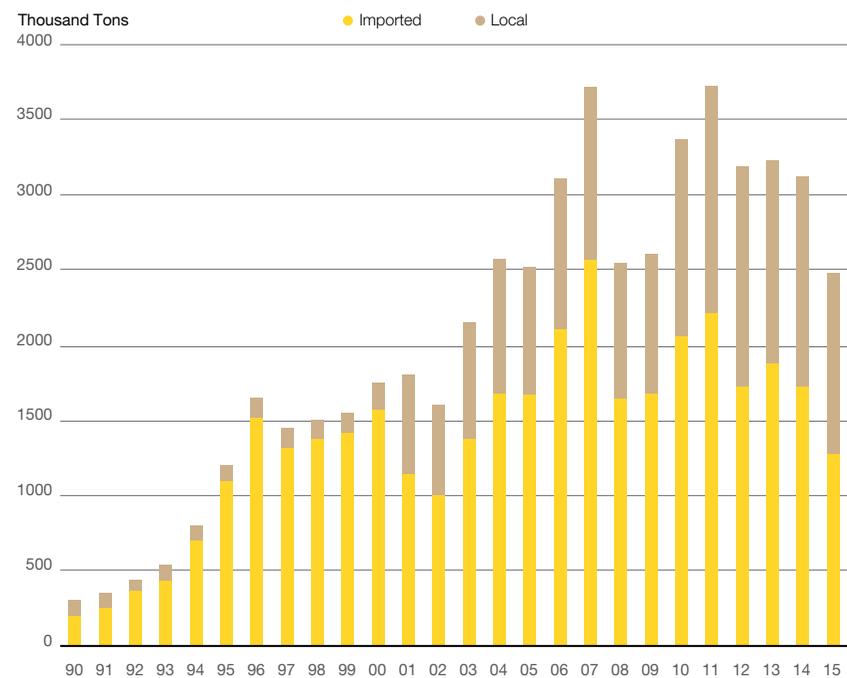
popular, support for more stringent safety regulation. CASAFE is also supported by CropLife Latin America in its attempts to standardise the crop protection industry: "As in other regions, we have two signature programs. The first is CuidAgro, in which we train farmers in the application of good agricultural practices. The second is CampoLimpio, which covers the collection and safe disposal of plastic containers for crop protection products. These programs are complementary to similar CASAFE programs," continued Perdomo. A third program run by CASAFE is Spray OK, which it hopes to begin rolling out across the country in 2017. Currently, anybody can use spraying equipment without certification. CASAFE, in partnership with the Institute of Standardization and Certification, aims to certify companies, operators and the machinery itself for both ground and aerial application of crop protection products. "Most companies do not own their own spraying equipment, preferring to rent it from larger companies. Our aim is to ensure best practice in the use and maintenance of these machines," said Landgraf.

CIAFA, which has 53 members, is a uniting voice for agrochemical companies in Argentina. It works with regional and national government agencies on legislation affecting the industry, and also works with farming associations to achieve its objectives. Although it has no barrier to membership, CIAFA is known for its work with Argentinian chemical companies: "We can promote local players by price and availability. If you import product from abroad, it could take around three months to ar-



FERTILIZERS CONSUMPTION EVOLUTION (Country Total)

Source: Fertilizar



FERTILIZERS MARKET EVOLUTION (2015)

Source: Fertilizar

Fertilizers Group	VOLUME (THOUSAND TONS)			
	First Quarter	Second Quarter	Third Quarter	Total
Nitrogenous	148	391	650	1.189
Phosphatic	82	311	690	1.083
Sulphur	13	29	52	94
Potassic	6	22	32	60
Others	7	17	24	48
Total	256	770	1448	2.474

Fertilizers Group	DISTRIBUTION (%)			
	First Quarter	Second Quarter	Third Quarter	Total
Nitrogenous	12	33	55	100
Phosphatic	8	29	64	100
Sulphur	14	31	55	100
Potassic	10	37	53	100
Others	15	35	50	100
Total	10	31	59	100

rive. This is not ideal in a market as dynamic as ours, so local products have the advantage,” explained Armando Allinghi, CIAFA’s executive director. Member company Gleba, which has been in the market since 1950 and now has an annual turnover of around \$40 million following a cash injection of \$1.5 million into its plant at the turn of the decade, is supportive of the opportunities provided by CIAFA: “CIAFA is a great platform

to share ideas, problems and solutions, as well as to network with firms. CIAFA and CASAFE share a good relationship and there are many areas on which we share points of view. However,” remarked Gleba’s commercial manager Miguel Seara, “it is also beneficial that we are able to discuss different points of view with complete freedom and openness.” For Gleba, one of the main issues affecting the agrochemical industry at present is the

rapid opening up of the market and the effect uncontrolled competition may have on local players. Under the previous administration, domestic chemical companies enjoyed import restrictions on formulated products from abroad; with the removal of these restrictions, combined with a lack of investment into improving checks on imported products, the industry fears low quality chemicals will make their way into the value chain. “Competition in the agrochemical market is high in Argentina and we need more control over Chinese companies importing into Argentina,” explained Seara. “The industry needs to see several stages of checks on imported products, covering areas such as environmental protection, processing and impurities, as SENASA does not conduct 100% checks.”

Fertile soils

Argentina is particularly proud of its fertile soil, which has been safeguarded since the late 1980s by Aapresid. This association was established by farmers concerned about soil erosion stemming from poor land management, with the aim of using good agricultural practices to prevent further erosion by winds and flooding. Although the no-till growing method was introduced to Argentina’s farmers in the 1970s by the National Institute of Agricultural Technology (INTA), a lack of specialized machinery meant the practice was not widely adopted. “It was the middle of the 1990s when no-till farming really took off,” explained Maria Beatriz Girauo, president of Aapresid. “Approximately 92% of farmers use the no-till method nowadays. When the system is combined with crop rotation, it improves all the soil’s physical, chemical and biological properties. Our soils are now in great shape to withstand issues that may arise in the future, such as flooding and drought cycles.” As well as maintaining the fertility of the soil through no-till farming methods, Aapresid is also aware of the benefits of using fertilizers appropriately. Of the 40% of a farmer’s revenue spent on agrochemicals, only 10% of that is allocated to fertilizers;

this number was even further reduced in 2015 as farmers were forced to tighten their belts. Girauo continued: “Aapresid then went on to develop a program for the strategic use of fertilizers, leading to further improvements on the quality and stability of crop yields, while reducing water usage.” Fertilizar is Argentina’s non-profit fertilizer association, working on behalf of the industry to promote the responsible use of fertilizers and the stewardship of high-productivity environments. One of its main activities at present is working with the government to bring in the Soil Improvement Law, which aims to incentivize farmers to use more fertilizers, and ultimately improve the quality of Argentina’s already fertile soil, by providing a tax break on fertilizer usage. “Fertilizers are crucial for the industry in producing more wheat and corn, rather than relying on soybean crops. Ten years ago, soybean planting was both very cheap and very easy, while

the return on investment was high. This led to an over-reliance on soybean crops to the detriment of other crops and nutrients were leached from the soil without being replaced,” explained Fertilizar president and Bunge marketing manager Jorge Bassi. “Rules have to be made in order to focus on this sustainability objective and to ensure the quality of the soil. In the future, we will also have rules for the correct usage of agrochemicals.” Compared to two decades ago, Argentina’s fertilizer production is fairly strong, due partly to YPF and Agrium’s joint venture into Profertil. The urea plant, located in Bahia Blanca, now produces around 90% of Argentina’s urea and 89% of Argentina’s ammonia, and was able to export 15,000 tons in 2014. Profertil has transformed domestic fertilizer production, with around 45% of the fertilizers used in Argentina being nitrogen based and reliant on natural gas as a feedstock: “The domestic urea market in particular faced a signifi-

cant production deficit. More than 90% of Argentina’s total fertilizer consumption – more than 1.5 million tons – was imported, while urea demand was at around 600,000 tpy,” explained Miguel Morley, Profertil’s president. While Profertil is Argentina’s domestic fertilizer company, its main competition comes from U.S.-headquartered Bunge. While Argentina’s annual harvest is around 100 million tpy, Bunge’s Bassi claims the fertilizer market is only around three million tpy. This dropped to approximately 2.5 million tpy in 2015 but, with improved agricultural tariffs in Argentina and the focus on the Soil Improvement Law, he expects demand to increase to 4.5 million tpy in the near future. “We could see a complete turnaround in the Argentine agricultural model in the next two to three years as we encourage farmers to take care of the soil and adopt environmentally friendly measures,” said Bassi. It appears that not only Bunge is aware of

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the potential in Argentina's fertilizer market; Rizobacter, a local company focusing on seed treatments and active ingredients for agrochemicals, and with an annual turnover of \$100 million, is set to expand into the fertilizer arena. "Our objective is maintaining the soil's fertility. We are finishing our fertilizer plant for micro-granulated, phosphorous-based fertilizers with high solubility in partnership with De Sangosse," said Ricardo Yapur, president of Rizobacter. "When our fertilizer plant starts operating, the high demand for fertilizers will bring the company increased profitability. Rizobacter will be the exclusive producer of De Sangosse products in Argentina."

A phoenix rising

As well as affecting sales in the fertilizer industry, farmers also avoided buying crop protection products in an attempt to curb their outgoings, explained Nufarm's Ekonen: "The business environment has been very tough. In the six months before the elections, farmers were increasingly uncertain about the future of the industry and decided not to plant crops. These factors affected the majority of the agrochemical companies in Argentina in some way and the pressure on margins was huge."

Argentina's agricultural production for the year dipped below 2014 levels as farmers refused to plant new crops in protest at the uncertain political situation, resulting in an overall turnover of around \$2.4 billion for the industry, down from \$2.7 billion a year previously. Nevertheless, the rapid pace of agriculture - over other industries which rely on plants and pipelines - means farmers can react almost immediately to economic developments. "When it seemed likely Macri would win, farmers immediately began to buy seed. Corn acreage grew 500 hectares in under a month because of the possibility of a new government and, in turn, fertilizer sales increased," said Ekonen. "Before the announcement that taxes on corn and wheat would be eliminated, the port was already discounting freight prices."

This new openness in the market could mean that chemical importers, such as InsuAgro, are bypassed by their suppliers in favour of establishing their own operations in Argentina. The company was launched in 2002 and distributes for clients such as Arysta LifeScience and FMC Brazil, as well as international companies from Europe, China and India. "The only challenge we may face is the potential for foreign players to leverage the low commodity price period and enter the market, which may cause interference in distribution. However, InsuAgro remains a small enough company to be an agile player and quickly respond to change," said commercial director Jose Mrejen. "We foresee a good period of growth ahead across all crop areas we supply to, which should improve our revenue stream."

Contract manufacturer Reopen, which formulates products on behalf of multinationals including Sumitagro, Dow Agrosciences and Bayer, is using this period of decreased agrochemical usage to improve its plant. Seeing potential for growth in the future, it is installing modern technologies to remain at the forefront of the tolling business. "The requirement for agrochemicals will slowly increase by the end of the year; although conditions for agricultural producers are good at present, they are cautious about future investments. New crop growth will require both more herbicides and more insecticides," said vice-president Fabian Gomila.

Weed resistance

The three most commonly used crop protection products in Argentina are glyphosate, making up around 78% of total agrochemical sales in the country in 2013, followed by atrazine and 2,4-D. Monsanto discovered glyphosate in 1970 and it was brought to market under the trade name Roundup in 1974. The company then produced glyphosate-resistant seeds, increasing crop production dramatically; it therefore comes as no surprise that around 90% of Argentina's main crops, such as corn and soybeans, are genetically modified.

Around 200 million liters of glyphosate and nine million liters of 2,4-D are sold in Argentina per year, with local company Chemotecnica producing more than half of the country's 2,4-D requirements. UPL Argentina, which is moving away from commodity agrochemicals to a more differentiated portfolio, stated herbicides have a 65% market share compared to other types of crop protection products: "Because of Argentina's no-till system, farmers consume herbicides year round. Insecticides and fungicides, on the other hand, are seasonal products and account for \$300 million and \$250 million of the overall market respectively," said Fernando Lespiau, commercial director at UPL Argentina.

Glyphosate alone accounts for \$800 million of the \$2.5 billion agrochemical industry in Argentina, but is losing ground to specialised formulations as a result of increasing glyphosate resistance in weed varieties. Companies such as Arysta LifeScience are shifting the focus of their research and development activity onto new preparations, which is proving a shrewd move: "Our main product and income generator controls grasses which have become glyphosate resistant," explained Eduardo Maier, director of marketing and R&D. "Clethodim ranks number three worldwide for herbicides and, despite the overall decrease in the agrochemical market last year, it saw a 25% increase in sales volume."

Agrofina is one of very few companies in Argentina which has the capabilities to synthesise its own products. With 85% of the global agrochemical market based on sales of commodity chemicals, and 93% in Argentina, national players such as Agrofina need to innovate in order to compete against multinationals and provide new solutions for farmers: "We have deep process knowledge on new ways to formulate and manufacture product and this has become our core business," said CEO Horacio Busanello of Agrofina's parent company, Grupo Los Grobo. "Being an Argentinian company, we are able to tailor our products to the local market, unlike multinationals which produce the same chemicals for all their markets."

Joining forces

Public opinion surrounding the use of agrochemicals is of concern to companies and growers alike. Both CIAFA and CASAFE focus on the need for education about the benefits of crop protection products, particularly in conjunction with responsible use programs, and CASAFE has also initiated a social media campaign to reach out to young people. "The public has a negative perception of the crop protection industry due to the improper use of agrochemicals," said CIAFA's Allinghi. "By encouraging best practice across Argentina, this will both improve the efficacy of crop protection products and lower the associated risks."

Best practice is particularly important in the application phase of various agrochemicals, and CASAFE works with the Ministry of Agro-Industry to promote their safe and effective use. This covers a variety of topics from standard spraying

procedures in certain weather conditions, required wind speeds for best results and correct safety distances for highly populated areas. However, the program has not yet reached everyone involved, as outlined by Arysta's Maier: "One of the big problems we have in this area is the use of contracted chemical sprayers, who are paid by hectare and therefore do not always take product application issues, such as wind speed and direction and proximity to populated areas, into account. CASAFE is working hard to educate people in the effects of product drift, for which there was a big campaign in 2015. If these sprayers adhere to the guidelines, there will be no problems with either ground or aerial application."

Furthermore, argues UPL's Lespiau, more than 50% of Argentina's arable land is not owned by the farmers who grow crops on it, "which leads to a focus on production and profit rather than environmental stewardship. Argentina requires some new legislation on how to properly manage rented

fields, which will improve the sustainability of our farmland."

Aapresid is also working with the governments of Santa Fe, Cordoba and Buenos Aires provinces to gain certification for sprayers, with the aim of rolling this program out across the country following success in these key regions. "Misusing agrochemicals is an acute problem which we are working very hard to solve," explained Aapresid's Giraudo. "The ultimate aim would be that without certification, workers would be unable to use such products."

Lining up the alternatives

An area which is coming into its own in Argentina is biotechnology, which aims to genetically improve a plant's growing habits, for example by improving its resilience to pests and extreme weather conditions. According to Agrofina's Busanello, the mergers of Dow and DuPont, and Chem-

LNOVA

Quality for your crops

Ruta Nac. N° 9 Km 379,9 / Tel: + 54 3471 422312 / Cañada de Gómez / Santa Fe / Argentina / info@laboratoriosnova.com
www.laboratoriosnova.com

China's acquisition by Syngenta, are indicative of wider global trends in this area: "Companies are realizing there is no single solution to increasing yield and it will take a combination of biotechnology and agrochemical technology to achieve the desired effect. In five years, the chemical market will look very different to now."

The industry as a whole is also feeling the impact of the global trend for sustainable operations and green solutions. This is particularly felt by multinationals and domestic companies working on joint ventures with international players, such as Chemotecnica, which is moving towards a more environmentally friendly portfolio of products with several U.S. companies. "We are seeing the market for solvent-based formulations reduce, while demand for green products and environmentally friendly solutions is increasing," said the company's president, Alejandro Golfari.

Some companies are modifying their entire business model to embrace bio-solutions, such as Brometan, which is the only company in Argentina working on crop-oriented biological controls. Its solutions are typically more expensive than traditional crop protection products, but it claims the return on investment is far higher than normal. Working with global companies on innovative solutions, general manager Pablo Raimondo notices the differences between attitudes towards chemical usage internationally compared with Argentina. "There is not a real consciousness of healthier foods among our local consumers and there is no clear legislation concerning fresh food production. A small number of producers are concerned about how to produce fresh products using sustainable and safe solutions and, for domestic consumption, quality is low and chemical usage is higher," claimed Raimondo. "For external demand, buyers establish the rules and production uses greener and gentler chemicals."

However, with external markets leading the way, Argentina and the rest of South America will soon follow. Brometan believes it is at the forefront of a change in attitudes and is developing products accordingly. "Our portfolio, with its spread

of traditional and greener products, is intended to manage the bridge between current usage trends and the requirements of the future," continued Raimondo.

Aapresid is also promoting greener farming practices with financial incentives, based on the European Commission's Roundtable on Responsible Soy certification: "This standard, implemented to meet the requirements of the European Renewable Energy Drive, covers areas such as protection of biodiversity, water use and soil fertility. Our certification program is much wider: Certified Agriculture is a Quality Management System (QMS) that aims to unify the good aspects of implementing a productive model based on the no-till method and the principles of sustainable, profitable and highly productive agriculture," explained Giraudo. "Farmers following this program receive a better payment for adopting sustainable soil practices."

A package deal

Agrochemical companies are acutely aware of their importance in ensuring Argentina's future on both a domestic and global level, and the need to move away from glyphosate, and its compatriots atrazine and 2,4-D, to more specialist, sustainable products. "The Argentine farmer is part of a value chain which has incorporated a range of technology in recent years, including in seeds, equipment and knowledge," said Nova's Piva. "Argentina has an incalculable potential in terms of the agricultural sector."

The first improvement in agricultural yield followed the introduction of hybrids in the 1980s, while the second followed the introduction of no-till farming and genetically-modified seeds in the 1990s; Argentina is now long overdue for a third wave of improvement in the sector. Chemotecnica's Golfari believes this will stem from precision chemical use and combining new crop protection technologies with fertilizers: "As yields increase, it will become even more important to protect crops; farmers may not choose to

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- Pablo Raimondo,
General Manager,
Brometan

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apply pesticides or fungicides if the difference will only be around 7% of yield increase. However, if farmers can improve the differential to 30% or 40%, demand for crop protection products will rise," he explained. "Focusing on the crop protection and environmental health sectors will enable us to achieve the government's goal." The aim of the incumbent government is to increase Argentina's agricultural output by 60% by the end of the decade. With farmers regaining around 20% of their profits from the removal of export taxes, leading to an increase in agricultural production, agrochemical companies are seeing 2016 as a transition year on the way to an increase of around 20% by the end of 2017. Argentina has the potential to increase productivity, not only by converting up to four million more hectares of viable land into crop fields, but also by increasing its use of biotechnology. The fertilizer industry, spurred on by the Soil Improvement Law and Profertil's expansion of its Bahia Blanca site in 2013, is also growing. Combining better practices and increasing the usage of fertilizers, seed technology and crop protection products should see the sector produce not only enough to satisfy domestic demand, but also create a surplus to dominate the supply chains of such crops across South America. —



Jose R. Perdomo

— President

CROPLIFE LATIN AMERICA

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The reason we chose Argentina as the location of the 2016 International Forum is because we anticipated the change of government and the new opportunities for agriculture in the country as a result. Argentina uses modern technologies in its practices, especially when compared with other countries in the region that do not have as much access to technology.

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Could you provide us with a background to CropLife Latin America and explain the importance of its activities in the region?

CropLife Latin America is a nonprofit organization working primarily in the crop science industry. We have 25 member associations in CropLife Latin America, from 18 different countries. April 2016 marked our ninth iteration of our International Forum, which is focused on sustainable agriculture through innovation. Argentina in particular is vital to this aim because it is a key exporter of crops in the region, alongside Brazil; together, these two countries account for 50% of South America's agricultural exports.

The reason we chose Argentina as the location of the 2016 International Forum is because we anticipated the change of government and the new opportunities for agriculture in the country as a result. Argentina uses modern technologies in its practices, especially when compared with other countries in the region that do not have as much access to technology. It has been proven to be capable of delivering large-scale production at a low cost because of its high productivity levels. We support not only large operations on the path towards growth and sustainability, but also medium- and small-sized farms, which require different policies that also support the market-driven economy. Such policies are conducive to growth and investment, and this aspect of agricultural support was lacking with the previous regime.

One of your member associations is CASAFE. How do CropLife and CASAFE work together to promote the importance of crop science within Argentina?

As in other regions, we have two signature programs. The first is CuidAgro, in which we train farmers in the application of good agricultural practices. The second is CampoLimpio, which covers the collection and safe disposal of plastic containers for crop protection products. These programs are complementary to similar CASAFE programs, such as Agrolimpio.

In terms of how we can assist CASAFE, we provide expertise on issues surrounding crop science, such as chemical toxicity, intellectual property, legislation, and best practices around the world. We are able to assist in creating regulatory frameworks

which allow not only the correct implementation of technology, but also for farmers and the industry to have confidence in CASAFE that it is monitoring and following new technological advances as in the rest of the developed world.

CropLife Latin America is an agent of transmission of best practices through the authorities and our network of associations. We are the spokespeople for the industry and try to educate all our stakeholders on how the industry is committed to science, innovation, and the production of food. We are helping to introduce biotechnology to Latin America in accordance with the regulatory frameworks within each country.

How is Latin America's agricultural industry positioned on the world stage and how can it fend off competition from other developing markets such as Africa and Asia?

Latin America is the largest crop producing market in the world in the context of both volume and sales. The region holds between one quarter and one third of the arable land in the world, which means we are already producing 16% of the world's food requirements. This could rise to 50% in the future, because we have the land available, adequate water supplies, a suitable climate and the human capability. It is a matter of developing a sustainable and responsible way of transitioning the technology. We have the potential to be more productive in the future because half of our current food production is carried out by 16 million small and medium-sized farming operations; these are the people that we are targeting to introduce new technologies into their farming practices.

What is your outlook for the future of Argentina's agricultural industry when taking the new government's current and proposed measures into consideration?

The measures that President Macri has taken in his first 100 days in office lead me to believe that we can adopt a positive outlook for Argentina's future. There is a clear commitment and plan for what needs to be done. We believe the new cabinet will deliver on their promises, which will lead to foreign investment returning to Argentina. —



Federico Landgraf

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President
CASAFE

— **Could you tell us about CASAFE and the association's operations in Argentina?**

CASAFE is a chamber that represents the interests of the agrochemical industry, with a particular focus on best practice and the responsible use of crop protection products. The association counts both national and multinational companies among its members. CASAFE also focuses on communication and education, using social media campaigns to highlight the need for crop protection products. We are also highly active in product stewardship, as this is an area where responsible use by growers makes a real difference to both efficacy levels and product safety standards.

What is the relationship between CASAFE and the regulatory bodies in Argentina, and how does CASAFE work towards industry-positive legislation?

CASAFE works hand-in-hand with the Ministry of Agroindustry, focusing on promoting best practice. We have a technical document that details best practices for the safe and effective use of crop-protection products, covering all topics from correct spraying procedures in certain weather conditions; required wind speeds for best results; and location-specific requirements for the maintenance of safety in sensitive areas such as rivers and highly-populated areas. We have performed 14 field tests to confirm this data is correct. This document is also provided to schools and teachers in farming areas as this is an effective way to reach parents and improve their methods. We also have a program to promote the wearing of personal protective equipment when using crop protection products.

CASAFE has three programs to ensure the safe use of crop protection products. Could you tell us more about Agrolimpio, Deposito OK and Spray OK?

As with many products, such as batteries and car tires, the disposal of agrochemicals requires specific attention. When the correct procedures are followed, the risk is removed. Our aim with Agrolimpio is to promote the recovery of empty agrochemical containers. CASAFE believes Argentina requires a national law to enforce the collection of these containers and this

is something for which we are lobbying. We also advocate a triple rinsing protocol, which removes 99.9% of the residual agrochemical prior to recycling.

We certify facilities for the storage of agrochemicals through our Deposito OK certification program. We have around 600 to 700 certified facilities in Argentina, which is around 50% of the total facilities in the country. The uncertified facilities are usually smaller, local sites; multinational companies will not sell their products to such facilities. Finally, Spray OK is a program we are working on and which we hope to have up and running by the start of 2017. Similar to Deposito OK, it is a certification companies can gain for their spraying machinery. Most companies do not own their own spraying equipment, preferring to rent it from larger companies; our aim is to ensure best practice in the use and maintenance of these machines.

Could you tell us more about the state of Argentina's agricultural industry compared to that in neighboring countries?

Argentina has very fertile soils so the use of fertilizers is not as important an issue as the use of crop protection products. As an example, soybean farmers will allocate 30% of their resources to such products, compared to around 10% on fertilizers. The most important crop protection products for growers are herbicides, with 78% of that market taken up by glyphosate.

What can we expect for the future of the agrochemical industry in Argentina, in light of the global population increases and the requirement for more food?

The agricultural industry is very important for both Argentina, in terms of the income we generate, as well as the world as a whole, as we are capable of producing more food. In addition to Argentina, Brazil and some countries in the former USSR could increase crop production; the United States and Europe, however, are at their limit. We think we could increase our output by 60% through fertilization, better practices and the development of more arable land. In the next decade, our farmers could be producing 160 million tons of grain per year, compared to 100 million tons at present. —

Armando Allinghi

—
Executive Director
**CHAMBER OF FERTILIZERS
AND AGROCHEMICALS (CIAFA)**



— **Could you tell us about CIAFA since its foundation in 1990 to the present day, covering any recent major milestones?**

CIAFA has 53 member companies, 35 of which focus on crop protection products, with the remainder covering fertilizers. Our key objective is to connect these companies with government representatives who are legislating on the various issues that affect them. We also work with farming associations to achieve our objectives and presenting a united voice; this is more effective than for each company to communicate with government figures individually. Our website also contains information on crop protection products and fertilizers for use by producers and farmers, such as which products control which type of pest or weed. We also have the Agro Deposito program which concerns the safe storage and management of these products.

One of CIAFA's main objectives is to promote local agrochemical companies. How can you ensure farmers choose local products in a market dominated by multinationals?

We can promote local players by price and availability. If you import product from abroad, it could take around three months to arrive. This is not ideal in a market as dynamic as ours, so local products have the advantage in this case. In Argentina, we have the opportunity to produce the most important herbicides, among other pesticides. Some of our member companies have the ability to synthesize, formulate

and sell these products here, reaching high standards and mitigating the wait on the supply chain.

In what ways does CIAFA work with regional and national regulatory bodies to ensure progressive legislation for the industry?

Depending on the nature of the work, we work at both a federal and a national level. The aim is to work with government in the development of laws pertaining to the crop protection industry, and this entails working with various ministries, including the Ministry of Agro-Industry. At a regional level we work with local governments to improve safety and understanding of pesticides, for example.

What sort of technological developments can we expect in the agrochemical industry in the future?

I believe seed technology will be particularly important, because new genetically modified seed products under development have different resistances to pesticides. Likewise, the development of new agrochemicals will create products able to tackle strains of weeds that are developing a resistance to the most commonly used herbicides. The demand for fungicides will also increase as the climate becomes hotter and wetter. New formulations will also be key to combatting this.

Could you tell us more about how CIAFA can ensure a balance between high

production levels on the one hand, and worker safety on the other?

The public has a negative perception of the crop protection industry due to the improper use of agrochemicals. By encouraging best practice across Argentina, this will both improve the efficacy of crop protection products and lower the associated risks. Technology and new formulations can also help to reduce the impact of these products in populated areas. It is easy for our producers to introduce new technologies, as the uptake by farmers is rapid when compared with other countries.

Could you tell us more about how Macri's agricultural reforms will improve the situation for the agricultural industry through 2016?

President Macri has reduced taxes and opened the market so producers now have the opportunity to vary the crops they grow and export goods such as wheat, corn and sunflower without as many difficulties as before. As well as an increase in our local market, I think we will also see the size of the average farm expand. An increased use of technology will also encourage greater yield. Although there may be some financing problems, which could limit growth, the feeling among farmers and the agrochemical industry in general, around both production and new technology, is positive. The new administration also wants to increase production from 100 million tons per year (tpy) to 160 million tpy over their four-year period in government. —

Maria Beatriz Giraudó

Former President
AAPRESID



How has Aapresid developed over the last quarter of a century and what services do you provide your members?

The association began as a group of around 20 farmers in the late 1980s in response to concern surrounding poor land management, leading to soil erosion. The aim was to use local farming to promote no till farming methods and as a tool to prevent ongoing erosion from the water and the air. At present, Aapresid has around 2,500 members; these are farmers from both established and smaller farms across the country, as well as technicians.

Could you tell us more about the introduction and promotion of no-till farming in Argentina?

The no-till system was introduced to Argentina in the 1970s when a group of farmers with the National Institute of Agricultural Technology (INTA) began to prove the no-till concept in Cordoba province. At the beginning, the biggest obstacle was obtaining agrochemicals for weed control that were both compatible with the no-till method and reasonably priced. Furthermore, due to the lack of specialized machinery, no-till farming was in large part abandoned.

By the middle of the 1980s, soil erosion had again become such a problem that there was renewed interest in no-till farming. Although adoption of this technique increased, it was very hard to encourage such a dramatic shift in agricultural practices. A group of farmers began to prove the technology and developed the specialized machinery required. Farmers and the machinery then began to work together to develop machinery not just tailored to the new requirements of no-till farming, but also to the needs of individual regions.

However, it was the middle of the 1990s when no-till farming really took off, following the approval of genetically modified soybeans for use in Argentina. Approximately 92% of farmers use the no-till method nowadays. When the system is combined with crop rotation, it improves all the soil's physical, chemical and biological properties. Aapresid then went on to develop a program for the strategic use of fertilizers, leading to further improvements on the quality and stability of crop yields, while reducing water usage. These farming practices have also led to an increase in the capture of atmospheric carbon, equipping us with a new tool in the fight against climate change. Our soils are now in great shape to withstand issues that may arise in the future, such as flooding and drought cycles.

How important are programs such as Responsible Use and could you tell us more about sustainability and environmental stewardship in Argentina's agricultural industry?

Misusing agrochemicals is an acute problem which we are working very hard to solve. Almost two decades ago we implemented a program called Certified Agriculture, which guarantees that those with this certification are working in an environmentally friendly manner and in accordance with the law. There are protocols for various soil and water samples to be checked and reported. This quality control program is gaining ground among farmers who see the need for such certification programs internationally. We also provide financial incentives from external economic reserves to encourage more farmers to become certified.

What initiatives does Aapresid have in place to promote good agricultural practices to its members?

The main way we can do this is at our Annual Congress in August, at which institutional specialists, technicians and farmers come together to share ideas. In 2015, almost 5,000 people from across Argentina attended the event, with the same number viewing the congress online from 25 countries worldwide. It is the largest agricultural event globally.

What will Aapresid be focusing on in future?

We strongly believe that following good agricultural practices is the only way to create economic, environmental and social stability in the agricultural industry. The keys to this are the no-till system; continued soil coverage by either crops or protective coverings protecting the soil from exposure to air, wind and rainfall; crop rotation to improve diversity and intensity; integrated management of weeds, insects and diseases using strategic and balanced nutrition; choosing specific agrochemical and biological controls; with responsible use of crop protection products in terms of correct product choice, operators and application. With so many of Argentina's farms using the no-till method, our mission has shifted towards promoting a sustainable system for food, fiber and energy, based on our network of innovators. Here at Aapresid, we believe we can be a strategic collaborator with local, provincial and national governments. —



Alejandro Golfari

President
CHEMOTECNICA

Could you introduce us to Chemotecnica's history and its development over the last 70 years?

Chemotecnica is a national company that has been in the market since 1943. We conduct synthesis and formulation of agrochemicals, selling directly to farmers through our network of distributors. Our last investments were for two new plants for suspension concentrate (SC) formulations, with a monthly capacity of 400,000 liters each. Our business is split 70:30 between crop protection products and environmental health solutions. Within the former, 50% of our sales volume is attributed to contract manufacturing, where we have seen steady growth since 2007. We are also working on a joint venture with U.S. companies to produce herbicides, insecticides and fungicides and have completed two SC formulation projects in this

area. Finally, we are seeing the market for solvent-based formulations reduce, while demand for green products and environmentally friendly solutions is increasing. This is very important due to Argentina's size and highly variable climates; we have to tailor our products and services to each region. The environmental health solutions market is growing in Argentina and, when compared to the United States and Europe, has the potential to grow exponentially. We are the market leaders with a one-third share of the market; our competitors are Bayer, Syngenta, BASF and a few smaller, local companies. Our aim is to triple or even quadruple our business to consolidate our market share. We have two lines of development in this area, focusing on pheromone synthesis and vector control of emerging diseases such as the Zika virus and Dengue fever.

Could you tell us more about your product basket and how you tailor your products for use in Argentina?

Volume is still a main driver for us and therefore we produce the commodity crop protection products; 200 million liters of glyphosate and nine million liters of 2,4-D are sold in Argentina on an annual basis. We can produce 37 million liters of glyphosate and 4.8 million liters of 2,4-D. The aim of our SC formulations plant is to produce specific herbicides to combat glyphosate and 2,4-D resistance in plants. One of the interesting things about Chemotecnica is that we have studied and developed formulations specifically for the Latin American market and have registered products from Mexico to Chile. Conditions such as temperature, rainfall and water quality vary so our formulations are specific to particular regions. We have already developed a water-based formulation for cipermethrin with very good results.

What is Chemotecnica's market share and how have the company's operations changed over the last few years?

In 2012, the government imposed restrictions on the collection of money from ex-

porting to 30 days. Over a period of two years this was increased to 120 days, but many of our distributors did not have the working capital to sustain themselves through this time. Brazil's agrochemical market has decreased, which has also had an effect on our sales, although we are still seeing strong demand for our products from other Latin American countries and South Africa. Our sales volume reached \$32 million last year, of which around \$3 million was in exports; this can be contrasted with our record year of 2010 when we generated revenues of \$38 million, of which \$10 million was exports. We expect to see a slow return to improved sales as a result of Argentina's new economic situation and a reduction in export taxes.

Considering President Macri's aim to make Argentina the supermarket of the world, how can Argentina improve its agricultural output?

Argentina has the potential to double its output by 2050. Unlike Brazil, which has a surplus of land to convert to farmland, Argentina's farmland has almost reached capacity. We have to increase yield per hectare through new technologies, at which Argentina is very adept. The first yield increase was the introduction of hybrids in the 1980s. The second technological improvement, at the turn of the century, was direct farming and GMO varieties that enabled us to broaden the agricultural frontier. The next improvement will have to come through fertilization, new herbicides, insecticides and fungicides. We will also need to focus on precision agriculture by targeting fertilizers on the areas they are required and, as a result, insecticide and fungicide use will rise. As yields increase, it will become even more important to protect crops; farmers may not choose to apply pesticides or fungicides if the difference will only be around 7% of yield increase. However, if farmers can improve the differential to 30% or 40%, demand for crop protection products will rise. Focusing on the crop protection and environmental health sectors will enable us to achieve the government's goal. —

Mauro Piva

General Manager
NOVA S.A.



Could you provide us with an overview of Nova?

Nova was created by my father in 1985 together with Ing. Carlos Milergeli. At that time, the focus was on developing, producing and selling coadjuvants for the local market around Rosario and the surrounding areas. We then started to develop other agrochemicals, including biological inoculants, seed therapies, insecticides, fungicides and herbicides. Today, Nova's products cover all phytosanitary product areas.

Could you tell us more about your product basket and any flagship products you have for use in Argentina?

Over the last four years, Nova has invested heavily in product development. We have approximately 70 registered agrochemicals, and our plan is to increase this to 130 registered products in the next three years. We generate around \$60 million in turnover, mostly from our herbicide segment, into which we are investing 60% of our research dollars. Nova is focusing on reformulating glyphosate-resistant products, as it is a serious problem for our market.

Because we are an Argentinian company, we have a rapid process for bringing products to market. We can quickly react to client needs without having to seek approval from a global headquarters, which is particularly helpful when solving problems such as insect plagues. Our distributors quickly find out what our clients need and we create formulas to suit their requirements.

Could you tell us more about your facilities at both your manufacturing plant and in your pilot plant?

We have a 14-hectare site, which equates to around 20,000 m². We recently bought a further 5-hectare plot in a nearby industrial park in order to develop a plant for solid herbicide production. Four years ago, we started to diversify into genetic engineering and to think about how we can develop by-products of our long-term fermentation processing into enzymes for the food and biofuel industry. We built a pilot plant and have five technicians focused on this research. Furthermore, we are building an industrial plant to produce different types of enzymes on a large scale in order to position ourselves in all markets, as enzymes are vital to many production processes.

As well as Argentina, Nova recently launched in Uruguay and the Dominican

Republic. Could you tell us more about your expansion plans across Latin America?

The last three years has seen us create our foreign trade department. We have started to register our products in Uruguay, Paraguay, Bolivia, Chile, Peru, Colombia, Ecuador, Dominican Republic, Mexico and Nicaragua, to name a few countries. This involves setting up a company in each country from which to trade. We are able to offer unique, tailored services to our clients abroad because we are working locally, rather than via a central headquarters.

Why does Nova choose to maintain its own distribution chain considering the infrastructure challenges in Argentina?

Nova has a network of around 740 distributors and cooperatives to whom we sell our product; they then sell our products on to the agricultural producers. Our sales team comprises of 15 agronomic engineers across five regions, as well as a registration and technical department. Running our own logistics operations from our site in Canada de Gomez, rather than using a third-party logistics provider, is a huge advantage for the company. We can ensure the quality of our products both as they leave our site and as they arrive with the consumer, and we can provide delivery in around 48 hours across the country.

Looking to the future for Argentina's agricultural industry, how do you see agrochemicals playing a role in increasing production and what role will Nova play in this?

Future expectations are favourable. All of our distributors have a positive attitude with regards to the recent governmental changes and, as a result, we have been encouraged to invest further in products and infrastructure. We are able to look towards long-term planning, which was previously very difficult to do in this country. Argentina has an incalculable potential, particularly in terms of the agricultural sector. The Argentine farmer is part of a value chain which has incorporated a range of technology in recent years, including in seeds, equipment and knowledge. They are now positioning themselves to be competitive on a global level, unlike other markets in Argentina which find it difficult to compete internationally. Argentina can be the leader in raw materials production, for example.

For our part, Nova plans to double its turnover, invest heavily into new facilities and products and diversify the company into different sectors. —

Horacio Busanello

CEO
GRUPO LOS GROBO



Could you provide us with an overview of Agrofina's operations and any recent key milestones?

Agrofina is more than 35 years old. The company started life as an R&D-focused contract manufacturer, but then moved into our own production and sales. In 2008, Agrofina was acquired by U.S.-based investment fund Matlin Patterson, which led to a more pronounced focus on sales and product development. Grupo Los Grobo acquired the company in 2013. We now have a production plant in Zarate which houses roughly 180 of our 290 employees. We also have our own good laboratory practice-certified R&D facilities with 30 people. The remainder work in commercial, administration and financial services in Buenos Aires. Over the last four years the company has increased its sales from \$40 million to \$120 million in a US\$ 2.5 billion market. We are currently putting our growth plan in place, in which we are launching new products at the rate of around two per year. From now until 2020 we will have launched a further 10 ten products into the market, meaning our portfolio will compare favorably with some of the largest companies in the market.

Agrofina has its own technologies, enabling it to conduct synthesis in house. Could you tell us more about your R&D and manufacturing plants in Argentina?

At the global level, 85% of the agrochemical market is off-patent, while at the local level it is around 93%. The biggest off-patent companies are multinationals, making it hard for us to compete in this area. We do, however, have deep process knowledge on new ways to formulate and manufacture product and this has become our core advantage. Being an Argentinian company, we are able to tailor our products to the local market, unlike multinationals which produce the same chemicals for all their markets.

Over the next five to ten years we do not expect there to be any revolutionary products in this field. Therefore we believe we are right to focus on the areas of formulation innovation and efficiency.

How important are associations such as CASAFE and CIAFA to the agrochemical industry in Argentina?

One of the things we need to improve is the standards of application for agrochemicals. We need to adopt certain European practices. This requires education, training and certification for the sprayers and greater communication with the general public about the standards the industry have adopted. For me, certifying sprayers should be part of the government's agenda. You have to have a license to drive a car and I believe the same should be true of those who use chemicals. I believe the new Ministry of Agro-Industry will be able to address this issue and come up with a solution.

Many companies choose to outsource their distribution to a 3PL. Why does Agrofina choose to maintain its own distribution chain?

Since Grupo Los Grobo acquired Agrofina three years ago, we have been working very hard to develop our marketing, technical assistance and sales teams. The most valuable asset a company can have is its customers. Reaching a certain level of customer intimacy and developing our network is part of our operations; by outsourcing this aspect of the chain we would be leaving part of our shareholders' value in third party hands. Furthermore, to avoid credit risk, we need to have many different points of sale rather than relying on a single distributor.

How has Argentina's agricultural industry changed since the election and what impact will this have on sales of crop protection products?

We will see the market growing for two reasons: one is the addition of up to four million hectares of viable land for growing crops. The other, more important, reason is the increased use of technology. In 2015, technology use was minimized because of the uncertainty surrounding the political climate. The new government's first steps have been in the right direction and they have delivered on their campaign promises so far. Farmers will therefore invest more in seed technology, fertilizers and crop protection products to increase yield, as crop prices will not dramatically increase in the near future. The only way to offset low prices in the market is to produce more per hectare, and technology will enable farmers to do this. I would predict an output increase of 20% for 2017/18. —

Eduardo Maier

Manager of Marketing and R&D
**ARYSTA LIFESCIENCE
ARGENTINA**



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It is difficult to demonstrate the benefits of combining agrochemicals with biological products to farmers but this is an area of increasing research worldwide and we expect to grow exponentially in the coming years.

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Could you provide us with an overview of your operations in Argentina, including any recent major milestones?

Although Arysta LifeScience has been present in Argentina since 2005, the company really started growing from 2011 onwards. Our purchases of Grupo Bioquimico Mexicano (GBM) in 2007 and Goëmar in 2014 extended our coverage into the biological products aspect of the agrochemicals industry. GBM produced bio-stimulants from plant extracts, while Goëmar's products were based on seaweed extracts and, with these products, plants become more robust and more resistant to fungi and diseases. It is difficult to demonstrate the benefits of combining agrochemicals with biological products to farmers but this is an area of increasing research worldwide and we expect to grow exponentially in the coming years.

In 2015, Arysta merged with Chemtura AgroSolutions and Agriphar Crop Solutions, as part of a global buyout by specialty chemical company Platform Specialty Products, and we now have a total of 21 employees. Chemtura had better distribution channels in Argentina, which has benefited our operations, while our product portfolios were very complementary. Chemtura focused more on seed treatments, particularly for peanuts, while Arysta's product basket included herbicides and biological products. Although peanuts are a small-to medium-sized crop of 10.4 million hectares in Argentina, it is very profitable. Our combined distribution networks are now very strong in the main agricultural regions of Argentina, but we are aiming to grow our market presence in the center and south of Buenos Aires province, as well as the north east of the country.

From our revenues of less than \$10 million at the start of the decade, Arysta generated \$48 million in 2015 and we expect to see sales of \$51 million for 2016 as a combined group with Agriphar Crop Solutions and Chemtura Agrosolutions.

Could you introduce us to your product basket and any flagship products you have for use in Argentina?

Our main product and our main income generator is clethodim, for which Bayer CropScience has been our main client for almost 30 years under the Select brand. We are now selling two of our own brands

containing clethodim: Lord and Kosako. Clethodim ranks number three in Argentina for herbicides behind glyphosate and 2,4-D and, despite the overall decrease in the agrochemical market last year, it saw a 25% increase in sales volume. The product controls grasses which have become glyphosate resistant. We are also working on a new herbicide for chemical fallow, corn and sugarcane called Dynamic, which should reach the market in 2016, and Celebrate, a combination of clethodim and amicarbosone manufactured by Chemtura, used for controlling grasses and volunteer corn. Finally, we are bringing out a concentrated version of clethodim which, at 36% EC, will be 50% stronger than current formulations; this will enable farmers to use less product per hectare.

Around four years ago, Arysta decided to formulate clethodim in Argentina using a contract manufacturer rather than import it from abroad. This enabled us to survive in the market as the government restricted imports of formulated products.

Could you tell us more about the importance of environmental stewardship in Argentina and the role associations such as CASAFE and CIAFA play in promoting this?

This is an area where Argentina needs to catch up with other countries. Both CASAFE and CIAFA are united in their efforts to increase the focus on stewardship, by implementing programs such as Agrolimpio and Deposit OK. One of the big problems we have in this area is the use of contracted chemical sprayers, who are paid by hectare and therefore do not always take product application issues, such as wind speed and direction and proximity to populated areas, into account.

Arysta celebrates its 15th anniversary this year. What can we expect for the company in future?

We are working on a new biological product affecting adult insects called Noctovi, which is an oil resin combined with a small quantity of insecticide. This is used in strips every 50 meters and kills adults before they breed, reducing the need for further applications of an insecticide. We are also working hard with new bio-solution products, which have big potential for the coming years as they improve both crop yield and quality. —

Ricardo Yapur

President
RIZOBACTER



“

Our objective is maintaining the soil's fertility. We work with our industry peers for this initiative because it is not possible for one company alone to make progress in this area.

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Could you introduce us to Rizobacter as a local Argentinean company which now has a physical presence in a further six countries and commercial activities in 25 countries worldwide?

Rizobacter is an Argentinian company with turnover of \$100 million; \$20 million is generated from our international operations, with the remainder coming from our domestic activity. The company is ISO 9,000, ISO 14,000 and ISO 18,000 certified and is audited by PwC. Our six global locations are in Paraguay, Uruguay, Brazil, Bolivia, South Africa and the United States. We have three strategic alliances with large multinationals: Switzerland-based Syngenta, which provides us with seed treatment products; Momentive from the United States, which supplies us with silicones for agricultural applications; and De Sangosse from France, from whom source pest control products for early-stage treatment of plants. The international market is very dynamic, and we export to 25 countries worldwide. Although our operations in 2015 were challenged by Argentina's dollar exchange rate, the market is now more favourable and Rizobacter will have a strong focus on international trade going forward.

Could you tell us more about your three plants in Argentina and your product portfolio?

The market for inoculants in Argentina is one of the biggest in the world and, because of this, we have a very modern inoculants production plant. In 2015, we inaugurated our formulation plant in collaboration with DuPont and are finishing our fertilizer plant for micro-granulated, phosphorous-based fertilizers with high solubility in partnership with De Sangosse, in time for its opening in June 2016.

Rizobacter's product portfolio is comprised as follows: 40% inoculants for seeds and seed treatments, 40% active ingredients/surfactants and the remainder are varied products, including the fertilizers we already sell. When our fertilizer plant starts operating, the high demand for fertilizers will bring the company increased profitability. Rizobacter will be the exclusive producer of De Sangosse products in Argentina. We also expect to see strong growth from exporting our products to South American countries in high volume.

You received the Phelps medal for innovation in 2012. Could you tell us more about your R&D work and how Argentina can lead the way in this area?

Overall, 30% of company turnover is reinvested back into the company; 20% of this covers personnel and equipment, with the remaining 10% being invested in innovation. Rizobacter invests in biologic products and we are always coming up with new innovations as a result of this strong investment. It is very important for Rizobacter to be partnered with institutes and larger companies such as our partners because of our size and the fact we do not have all the necessary resources for R&D. We make agreements with researchers at universities to make developments on products we are interested in and then have first refusal on the product if we believe it is usable and fits within our vision.

In terms of your work on the environment, we would like to hear more about your initiatives to find new sustainability measures, and why you think this is important?

We understand that the sustainability of a system is fundamental. Therefore, we are always looking to bring products to the market that help advance this area in some way, whether they be applicable to all crops or one. Our objective is maintaining the soil's fertility. We work with our industry peers for this initiative because it is not possible for one company alone to make progress in this area. Ensuring sustainable measures are implemented is the only way to continue production for the next twenty years.

Could you provide us with your insights into the future of the agrochemical industry and Rizobacter's role in it?

In recent years, we have invested in our company to ensure we are ready to face any challenges that may arise. The more Argentina produces and exports, the more we will have to produce to meet the market's needs. We also believe the solution is neither genetic nor chemical, but a collaboration of the two technologies. With regards to Rizobacter, global market consolidation is more an opportunity than a threat; the larger a company, the less agile it is, and this is where agile, fast-acting companies such as Rizobacter can flourish. —

Ulrik Ekonen

South Latin America Manager
NUFARM ARGENTINA



Could you tell us about Nufarm's operations in Argentina and how it has developed over the years?

Over ten years, Nufarm grew from a \$10 million to a \$100 million business. We have pursued a strategy of formulation differentiation, which addresses certain gaps in the market. Nufarm also has a strong background in barter, and 30% of our sales are paid for in crops such as soya, which we then sell. This provides farmers with a different way to manage their outgoings. Nufarm's strategy focuses on five crops: soya, corn, cereals, pastures, and tree nuts and vines, with the first two being most prevalent, as well as four worldwide hubs, one of which is Latin America. We currently have a market share of around 3.5%, although we want to increase this to 8% by the end of the decade. We do not yet have coverage in all the regions of Argentina, so we want to expand across the country.

You launched Nufarm System in 2014. Could you tell us more about this and the importance of innovation for the crop protection industry?

Nufarm System is our way of getting closer to the end user. It is a decision-making software that allows farmers to make better product choices and learn more about their responsible use. In Australia we also have a product called SprayWise, which combines this type of information with weather forecasting, letting farmers know the best timeframes for spraying. It is a work in progress for Latin America.

How did the outcome of Argentina's election affect the agricultural industry?

When it seemed likely Macri would win, farmers immediately began to buy corn seed. Corn acreage grew 500 hectares in under a month because of the possibility of a new government and a lift on export taxes. In turn, fertilizer sales increased. Before the announcement that taxes on corn and wheat would be eliminated, the port was already discounting freight prices, highlighting the speed with which the agricultural industry moves in this country. In terms of specific crops, we can expect wheat acreage to grow by 1.4 million hect-

ares to around five million hectares; this will, however, still be lower than the six million hectares we have previously seen. Argentina's corn production will increase by around 700,000 hectares to 3.8 million hectares, which will also impact the sales of fertilizers, crop protection products and machinery. If all this happens, we can expect the agricultural market to increase from last year's \$2.3 billion to \$2.5 billion.

Could you tell us about the importance of associations such as CASAFE and CIAFA to the agrochemical industry in Argentina?

We participate in both chambers because, traditionally, CIAFA represented local companies and CASAFE represented multinationals. Now they are starting to work together to advance particular causes, such as the safe collection of chemical containers. They understand that it is important for both the end-user and the public to understand the facts about crop protection products and their benefits to the agricultural industry when used correctly. These associations are also able to promote education, training and certification programs, such as certifying chemical sprayers and warehouses for distribution. It is important to have associations such as these now we are seeing increased communication with Argentina's new government.

Could you tell us about your plans for the future of Argentina's agricultural industry and Nufarm's role within it?

We believe Argentina will continue to be a big player, particularly in the soya, corn and wheat markets. This will also drive growth in the biodiesel market. If the government creates the right conditions for investment, it will pull production from the field. We also need to find the right legal frameworks for patent protection as we will see more biotechnology coming through. For Nufarm, we envision a business where doing things differently to our competitors will mean we can double our turnover. We are now reliant on the government to improve the energy matrix and road infrastructure in this country, as without this it will be very hard for industry to flourish. —

Miguel Seara

Commercial Manager
GLEBA



Could you provide us with an overview of Gleba's operations and your four divisions?

Gleba was founded in 1950 and we now have four divisions: home and gardening, agribusiness, export, and formulation. In 1996, we joined the Chile-based company Anasac and, in 2006, when Anasac acquired 100% of Gleba, the decision was made to change our focus. An investment of \$1.5 million was injected into the company for the development of our plant near La Plata, Buenos Aires province. This was a new start for us, because we needed to create several different departments. The idea was to sell our products for distribution, but this proved challenging as the Gleba brand was unknown at that time. The objective was to quickly formulate products that were going off patent and to build a brand name with a portfolio of specialty, post-patent products. While in 2005, 95% of our business came from contract manufacturing, this has now reversed, and 95% of our revenues are generated from our own-brand products. When I started with the company ten years ago, we were generating \$10 million in turnover; this has since increased to \$40 million.

Could you tell us more about your product portfolio and any flagship products?

We formulate soluble liquid and suspension concentrate (SC) herbicides, such as Katana, Tiento, Bectra and Bagual, as well as pesticides, insecticides, and fungicides in emulsion concentrate, SC and powder formulations. We also maintain some contract manufacturing work for companies such as Sumitagro and FMC Corporation. One of our main fungicide products is Janfry Xtra, an SC product, while our main insecticides are Comba Xtra, Vento and Fast Ultra.

How did Gleba create its distribution network and how do you reach clients now?

In the commercial and marketing spaces, Gleba's management already knew the key players from previous roles, so it was easy to build up a base of support. One of the most important things for us to do was to work on our credit department, and we appointed a specific credit manager. A good manager with knowledge, experience and connections in the market is key to our operations. In the past, Gleba sold products to buyers and big companies but we now have more than 100 clients, all of whom have their own risks.

With the support the agricultural industry is receiving from the government, what can we expect to see in the industry in future?

The previous government protected local industry and stopped the importing of formulated products from China, for example. The new government is rapidly opening up Argentina to foreign markets, but it must also keep in mind the needs of local producers. We are, however, speaking with the new Minister for Agriculture, and the new government in general seems to be more open to communication with industry. Competition in the agrochemical market is high in Argentina and we need more control over Chinese companies importing into Argentina. The industry needs to see several stages of checks on imported products, covering areas such as environmental protection, processing and impurities, as SENASA does not conduct 100% checks. —

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Miguel Morley

President
AGROSERVICIOS
PAMPEANOS

Agroservicios Pampeanos (ASP) began in Argentina in 1995. Could you provide us with an overview of the company's development over the past two decades and tell us about any major milestones, such as your acquisitions of UAP and a division of DuPont?

ASP, as part of Canada-based Agrium, was attracted by Argentina's free market-oriented policies, coupled with incentives for foreign investors that were in place at the time. Agrium followed up the establishment of ASP with investment in the Proferil urea facility, which is now a joint venture with YPF. ASP started with four farm centers along the railways, which we thought was an excellent way to transport fertilizers to plants; however, Argentina's railways have not received investment since then and therefore the proximity to the railways is no longer significant. In 1997, we added 14 farm centers as green field sites, which were established in a similar manner to our Crop Production Services (CPS) facilities in the United States. CPS is now our dominant brand in North America.

In 2001, the Argentine crisis occurred, which led to the collapse of many markets. I joined the company three years later, when the decision was made to revive the Argentine business. We closed our operations in Bolivia but continued with our Chilean business. We then acquired the retail facilities of DuPont, which included a chemical formulating center in Santa Fe. Today, we have 43 farm centers in Argentina and have grown our green field farm centers. ASP grew steadily until 2011, which is when foreign investment in Argentina declined. We acquired a Brazil-based blending facility in 2012 and have been operating it ever since.

ASP works with Aapresid and Fertilizar on research and development (R&D) opportunities for fertilizers. Could you tell us more about the importance of innovation in this area and the effect the Soil Improvement Law will have on the market?

We come from a strong technical position. Our R&D focuses on providing strong, technically sound services to our customers. ASP has a strong presence in most important agricultural areas, with agronomists who work with our suppliers on running trials with farmers. Our services and sales are based on technical recommendations. ASP is known for providing innovation and technology, for example in our introduction of logistics for fertilizers in bulk. We are also launching a satellite precision mobile application (Echelon), which supports farmers with imagery and guidance on variable rate applications, complemented by a team of professionals.

Could you tell us about your work in promoting the safe use of crop protection products and the importance of educating the public in these areas?

The opportunity to promote best practices and to educate local populations is present in our activity with suppliers, and is something we are actively pursuing. We have a strong distribution network across the country, which provides a strong foundation but needs to be capitalized on further. ASP hosts safety days, which involve opening up our farm centers to children from local schools to learn about aspects of safety in a rural environment. We also invite the fire brigade to demonstrate how to operate fire extinguishers, for example. Furthermore, levels of road accidents in Argentina are particularly high and we also focus on promoting and emphasizing road safety.



Considering the recent change in government and President Macri's public declarations of support for the agricultural industry, what can we expect to see in future?

The new government has solved problems from the past and generated a positive environment for future production. The Soil Conservation bill currently making its way through Congress is a step in the right direction. If we want our children and grandchildren to enjoy the merits of good soil, we need to increase our use of fertilizers. I believe there will be challenges in the future, but with the change in government we will see positive changes soon.

The big questions now surround Argentina's fiscal deficit, along with inflation levels. The government is attempting to solve this problem whilst protecting the weakest segments of society. One in three Argentines are below the poverty line and it is challenging to take action while also protecting this segment. We need to recover credibility from the international community, which is a challenge for Argentina as we need foreign investment going forward. The current cabinet is one of the strongest Argentina has seen, containing qualified professionals in the financial arena, so we are optimistic for the future.

Jose Mrejen

Commercial Director
INSUAGRO



InsuAgro was founded almost 15 years ago. Could you tell us more about the company's history and any major milestones over the last decade and a half?

Having previously worked at Japan-headquartered Ishihara before it exited Argentina following the 2001 crisis, we gathered the qualified human capital left behind, together with the contacts we had made, to launch InsuAgro. Luckily, clients were willing to support us in this endeavour and it was a success. We began to distribute products for FMC Brazil in 2004, as well as importing from our suppliers and working with international companies from India, China and Europe.

While we are a small company compared with multinational players, we are bigger than many small commodity producers in the domestic market. We are one of the few independent distributors in Argentina able to work without having to report to bureaucratic headquarters. This facilitates our work with clients and we have fantastic customer loyalty. InsuAgro has an experienced sales team with strong expertise in the sector. We have seen high rates of growth and were therefore able to join the Buenos Aires stock exchange in 2006 as another way of raising working capital.

How has the opening up of the Argentine economy affected your role as an importer of agrochemical products?

Argentina constantly experiences changes on the import scene. After the 2001 crisis, the number of distributors decreased due to the challenging environment; now, Argentina's new openness has enabled more suppliers, mainly from China and India, to enter the market. Our approach is more traditional, and is based on client loyalty and focused on high-value and high-quality products. Having said that, we do work with trustworthy suppliers from both China and India.

Could you tell us more about your product portfolio and any flagship products, as well as how you can tailor these products for use in Argentina?

Manufacturing our own products had made up 50% of our operations but, as we have focused on our distribution services for clients such as Arysta LifeScience and FMC Corporation in recent years, this has decreased to around one-third of the business. We avoid selling glyphosate, meaning sales of the commodity account for only around 5% of our turnover. We strive to provide technical product support and focus on niche products with high margins and therefore high profitability. InsuAgro always looks for product differentiators; if we are not producing a chemical with our own active ingredient, then it will be our own formulation.

Do you have a final message about the future of the agricultural industry in Argentina and InsuAgro's role within it?

It is InsuAgro's aim to be a leading agrochemical exporter. Despite current low commodity prices, the agrochemical industry here has huge potential. It is a very dynamic part of the Argentine economy and, as suppliers, we will undoubtedly be sharing the prosperity. The only challenge we may face is the potential for foreign players to leverage the low commodity price period and enter the market, which may cause interference in distribution. However, InsuAgro remains a small enough company to be an agile player and quickly adapt to changes. We will continue to deliver high quality products and look after the environment. We foresee a good period of growth ahead across all crop areas we supply to, which should improve our revenue stream.

InsuAgro
Technology in crops protection

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Argentina: (54 11) 4811-7210

Fernando Lespiau

Commercial Director
UPL ARGENTINA



less effective as weeds are developing a resistance to the product, so we are looking into solutions provided by systemic and residual treatments. This is also leading us to return to older compounds for creating new molecules and formulations, mainly in herbicides, which have a 65% market share. Because of Argentina's no-till system, farmers consume herbicides year round. Insecticides and fungicides, on the other hand, are seasonal products and account for \$300 million and \$250 million of the overall market respectively. Due to Argentina's temperate climate, only around half of the soybean planting areas require fungicide, for example. We are trying to work on solutions that not only target resistance but also avoid the development of new resistance across the fungicide, insecticide and herbicide markets.

UPL is also one of the world leaders in post-harvest protection and distributes DECCO products in Argentina. Our share of the \$10 million post-harvest grain market is around 50%, while in fruit and vegetables our share reaches 80%.

How can the industry promote best practice in terms of application of agrochemicals on the one hand, and high production levels on the other?

Although everyone in the industry is trying to promote best practice, there are two issues unique to Argentina which make this difficult. The first is that more than 50% of the area is planted on rented land, which leads to a focus on production and profit rather than environmental stewardship. Argentina requires some new legislation on how to properly manage rented fields, which will improve the sustainability of our farmland. The second issue is that many labourers are contracted by third parties, both for spraying and harvesting. Companies and the government should work together to develop training programs to ensure high quality agrochemical application across the board.

Unlike glyphosate, which is systemic, contact herbicides require greater skill and capability from the sprayer. Poor application practices that may have worked for glyphosate, such as spraying in high winds, will therefore not provide effective crop control. We try to promote application quality through workshops with our distribution network, while Aapresid also holds relevant workshops.

What can we expect for the future of the agricultural industry in Argentina?

Many products will be going off patent in 2017, which will lead to a natural increase in the size of the market. There are also no blockbuster products in the pipelines of the big R&D companies. The key issue is market access and only those companies with access to consumers will survive, so we are likely to see more consolidation within the industry.

Argentina also needs to improve its transport logistics. At present, 100% of grain production is moved by truck, but we need to utilise our railways and rivers.

Looking ahead, what are UPL's plans for future growth?

Our target is to double our business on both a global and regional level in the next four years. We have been working on developing and registering new product solutions and we are now taking these products to market. UPL wants to increase its revenue and will focus on this rather than expanding its market share. —

Could you provide us with background to UPL's presence in Argentina and the importance of Latin America to the company's corporate strategy?

UPL started its Latin American operations 10 years ago, initially in Argentina and Mexico. Today, the region is UPL's largest, accounting for 27% of total sales. We have since opened offices in Costa Rica, Colombia and Brazil, and have three production facilities in the region in the latter two countries and Argentina. In 2005, UPL acquired Reposo, followed by Icona two years later. Reposo's production facility is located 80 kilometers (km) from Buenos Aires, while Icona has two facilities, one in Buenos Aires and one in San Luis province. The two companies merged in 2007 and became Icona, in line with UPL's corporate strategy of becoming a multinational company, before re-branding to UPL Argentina. The company is also moving away from contract manufacturing, as was the business model followed by Reposo and Icona, to a portfolio which offers customers added-value products.

Could you tell us more about the transition process taking place within UPL Argentina's product portfolio?

UPL Argentina is reducing its dependency on glyphosate-related products, which currently account for \$800 million of the \$2.5 billion crop protection product market. The chemical is becoming

Pablo Raimondo

General Manager
BROMETAN



with low chemical charge. This is however just the beginning; Argentina and the whole region is still far from other more developed countries and we still have a long way to go. We believe Argentina and South America will play key roles as food producers. Our challenge is to provide the market with well-balanced and effective products helping the farmers in the adoption of new technologies.

Brometan is moving towards a portfolio of more sustainable products. How receptive are Argentine farmers to these?

There is not a real consciousness of healthier foods among our local consumers and there is not a clear legislation concerning fresh food production. For domestic consumption, quality is low and chemical usage is higher. For external demand, buyers establish the rules and production uses greener and gentler chemicals. Our portfolio is intended to manage the bridge between current usage trends and the requirements of the future.

What are your expectations for the future of Brometan and its growth in the market?

We strongly believe Brometan is in the right place at the right time. South America, and particularly Argentina, are intending to be global providers of good quality, fresh products for the global market. As soon as the export industry picks up, growers will be able to look at the different options available. Many growers focused on exports are highly adaptable and interested in introducing new technologies to increase yield and quality, and many new international companies will participate in these business opportunities. —

Could you provide us with an overview of Brometan from its founding in 1976 to the present day, including any recent major milestones?

Brometan was founded almost 40 years ago and currently operates in Argentina and Uruguay, with an ambitious vision to be a regional company. New management was put in place a decade ago, and the company's strategic focus was moved to providing sustainable solutions for high-value crops. We improved our nutritional portfolio with bio-stimulant and specialist fertilizers, and Brometan is the only company in Argentina working on pollination and biological controls. Our marketing is crop-oriented and we distribute our products across the country, using five strategically located warehouses to supply the market. The company works via push-and-pull programs; we have a sales force of ten sales consultants complemented by a team of 17 agronomists working in the field with local growers and technicians, coming up with new technologies. Our main warehouse and administration offices are located in Buenos Aires. Brometan's vision is to find and develop sustainable solutions for high-value crops. In this way, we can be perceived as the best commercial option for international companies on their way to initiate and establish new business in our country.

Brometan began working with Belgian company Biobest in 2012. Could you tell us more about this collaboration?

Together with Biobest, Brometan has developed a new breeding program to produce an indigenous bumblebee species for pollination. Until now, no local species have been successfully bred in confinement. The advantage of bio-pollination against manual or chemical pollination is the increased yield and the quality of the fruit. This native bumblebee enables us to introduce our product not only in the Argentine market, but also in the rest of South America. Legislation prevents the introduction of a non-native or exotic species, which is why we focused our efforts on developing local species widespread throughout the region.

Could you tell us more about Brometan's product portfolio?

Over the last ten years, we have successfully included a wide range of specialty products into our portfolio, contributing to a healthier planet

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Javier de la Rua & Jadyr Carlos Piva de Sousa

JR: Country Manager
ROTAM ARGENTINA
JCPS: Business Development Manager
ROTAM LATIN AMERICA SOUTH



JR

Could you tell us more about Rotam's product mix and any new products in the pipeline?

JR: We have many effective herbicides and fungicides in the pipeline that we believe will be the future for the market. Our azoxystrobin supply comes from Syngenta, while we have good deals in place with China for raw materials. Our products, which are more complex than glyphosate and 2,4-D, will add more value to end users.

JCPS: Glyphosate is a commodity product and it is therefore very difficult to do something different with it; all that is required is volume and price, and this is not Rotam's business model. Our focus is on specialty agrochemicals that provide real added-value in areas of increasing importance, such as glyphosate-resistant weeds. Our research and development infrastructure, comprising laboratories, synthetic chemistry, molecular analysis, purification and formulation development, is located in China. This enables us to pre-mix a number of active compounds in the same formulation, allowing for one multifunctional product for the end user. We are currently working on a formulation project incorporating four active compounds for our Argentine and Brazilian markets, and it is this type of technology we believe has a long-term, promising future.

How important are associations such as CASAFE to the agrochemical industry and in what ways does the company promote best practice?

JR: We know it is our responsibility to reach the end user, and the most effect way for us to do this is to provide adequate education in product application. We are also conscious of our social responsibility and this is where our membership of CASAFE comes in. The idea is to work together to

have global solutions, and all companies realize this is the best route to success. As part of this aim, we are establishing a foundation with Dow Argentina and Rizobacter with the objective of working with the state on all issues related to the packaging and re-use of agrochemical bottles. When agrochemicals are properly applied and containers are disposed of correctly, there is no problem; however, when the correct procedures are not followed, toxic material can leech out into the environment and pose a danger to human health.

What effect has the new government had on the agricultural industry in Argentina so far?

JR: The changes that have already been made have been very positive; we now have greater access to ministers, which improves their understanding of our industry when making policy decisions. We also believe this government will be easier to predict in areas such as importing. The clear messages we are receiving from the government have improved our planning abilities; we have clearer goals for the future and are positive about the future potential of Argentina's agrochemical industry. Where we see the greatest risk to business is the aggressive pricing policies of our competitors.

Looking ahead, what can we expect for Rotam Argentina in future?

JR: Our aim is to have the right product for the farmer at the right time and to provide effective logistics and financial tools for each client. We are here for the long term and wish to develop good customer interactions. Furthermore, while many companies were reducing their staff numbers in 2015, Rotam hired three new employees. With our new products, we believe we can grow our business by more than 20% in 2016. —

Fabian Gomila

Vice President
REOPEN S.A.



Reopen is celebrating its 35th anniversary this year. Could you provide us with an overview of Reopen since its founding in 1981 to the present day?

My father founded the company to manufacture household products and to provide contract manufacturing services. We then began to offer other services such as mosquito coils and mats, and liquid and powder insecticides, before moving into the agrochemical market in the 1990s. Our chemists travelled to Osaka, Japan for R&D training and subsequently worked to adapt Japanese formulas for the Argentine market. This sometimes involved replacing compounds with analogous chemical products more readily available in Argentina. In 1992, we began to formulate small quantities of agrochemicals for Japan-based Sumitomo Corporation; Argentina was a pilot country for the company and we grew with it as it increased its market share. Although we initially formulated emulsion concentrate products, insecticides and herbicides, we then incorporated suspension concentrate (SC) products into our portfolio, creating new facilities for these formulations in 1993. Around the same time, we went into business with another Japanese company called Ando, which specializes in agrochemicals for fruit and vegetables. In 1995, we started working with Dow Agrosiences, producing a powder product based on chlorpyrifos. We also work with BASF and BAYER, out of a total of 10 main clients.

In 1998, we bought our eight-hectare site and started to build our current plant, including warehouses, offices and clean rooms. Production and development for glyphosate facilities began in 2000. Since that time, we have added 18 new buildings to the site.

Why do companies choose Reopen as their contract manufacturer in Argentina?

We aim to have a good relationship with our clients. We have an Open Door policy, which means that they can visit the plant any-time to control the production, take inventory, or simply observe

our working practices. We decided to increase our facilities to manufacture a compatible family of products. First we created a separate, re-sized facility for insecticides, followed by growing the capacity of our warehouses to store these products. We now have separate facilities for each market and can, in some cases, offer our clients dedicated warehousing space when required. Clients choose Reopen because we are their one-stop shop: we do everything, from manufacturing to packaging, and have good cross-contamination prevention protocols. In 2014, we achieved Bureau Veritas ISO 9001 certification for our facilities after almost two years of hard work.

Could you tell us how you ensure worker safety when working with hazardous chemicals?

We provide personal protective equipment to all of our employees and are working on improving our production facilities throughout the site, in particular the areas of suction, charging and loading systems. We are also building a new fire suppression system, which was an expensive investment in terms of both capital and installation time. All of our procedures have specific safety recommendations and methodologies to control the risk of toxic or high-risk intermediates.

How do industry associations such as CIAFA work for the benefit of their members?

CIAFA provides us and other companies with representation in front of government bodies, as well as protection for the Argentine industry. With its knowledge of the industry, CIAFA is able to lobby for measures such as importation taxes to protect our products against cheaper imports.

Looking to the future, what can we expect for Reopen in the short term?

We believe we are well prepared for the future. Although conditions for agricultural producers are good at the moment, they are cautious about future investments. The agrochemicals requirements increase every year and we are constantly looking for improvements, such as investment in modern technologies and equipment in order to satisfy market demand. We regularly work with our clients to establish an annual plan and keep updating it considering the demand forecast, which will enable us to remain a key competitor into the future. —





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Image: Odebrecht

SERVICES AND TECHNOLOGY



"The main change in the coming years will be the clean fuel regulations, which will mostly affect the refinery sector. These will be a game-changer, with the demand of hydrogen for refineries increasing significantly. Hydrogen is also crucial for improving the quality of fuels. Future regulations requiring the reduction of fuel sulfur content will certainly require hydrogen, which is at the heart of these purification processes."

- Gonzalo Ramón,
Managing Director Argentina & Uruguay,
Air Liquide

The only way is up: Argentina's EPC providers give their view

By Harriet Bailey

82 Service providers in Argentina, which may have worked on large-scale petrochemical plant projects in previous years, have seen limited activity from the sector during the last decade. However, potential reductions in one market are usually balanced out by growth in other areas, and it is testament to their flexibility that they have been able to maintain strong growth in what has been a challenging time for many of their key clients.

However, the recent hydrocarbon discoveries in Vaca Muerta, YPF's aim to lead Argentina to energy self-sufficiency and a new openness to foreign investment signal the potential for a significant ramping up of production. With feedstock supplies ensured until at least 2050, engineering, procurement and construction (EPC) companies will again be in high demand from both up- and downstream players. "As petrochemical investment comes into the country, particularly from players such as Dow and YPF, AESA can be very supportive of EPC projects," claimed general manager Adrian Mascheroni.

AESA is YPF's EPC service provider; with more than 65 years of experience operating in the energy industry, it covers four main business lines: engineering, manufacturing, construction and operation

and maintenance services. The last few fallow years in Argentina's petrochemical industry have enabled AESA to build on its experience on some of the country's largest projects, such as in Bahía Blanca or on YPF's La Plata refinery, as well as on more recent projects across the South American region, to ensure it remains at the forefront of refining and petrochemicals service provision. "In order to be able to work on such big projects, we have had to develop a strong engineering department over the last seven years, rather than relying on the knowledge of other engineering companies," stated Mascheroni. "We also developed our knowledge and experience in construction as the complexity of our projects increased, for example in the middle of the jungle in Peru and near the Rio Grande in Bolivia."

One way in which AESA has changed its methods to align with the current challenges facing EPC companies is to implement project modularization. This has enabled AESA to reduce its workers' exposure to risk, as well as improve project completion times: "In the La Plata project, for example, we were able to go from construction to execution without any corrections to the model, which is normally very difficult to achieve," continued Mascheroni.



Image: Odjell Terminals TAGSA

Infrastructure challenges

According to APLA executive director Manuel Diaz, one of Argentina's biggest challenges is infrastructure investment, while IPA's president Ignacio Millan believes the country's railways, ports and storage capacity should be the focus of the Macri administration. The long-awaited expansion of the Panama Canal, in order to increase capacity for the new generation of super tankers, has seen modernization plans given the green light in port towns along the U.S. Gulf Coast; Argentina, meanwhile, has delayed new investment into its ports due to economic uncertainty and a weak oil and gas industry.

Argentina boasts the second-longest river in South America after the Amazon; at 4,880 km, the Paraná River connects the chemical-producing ports of Zárate and Campana with the Atlantic Ocean, but is so far an under-utilised resource. Carboclor, the main isopropyl alcohol manufacturer in Latin America, is located on the shores of the Paraná and has a 300 meter dock port to receive offshore vessels. "Carboclor's proximity to a deep river like the Paraná River would allow the company to transport more volumes at lower costs," said general manager Alfredo Fernandez. "The increase of waterway transportation would also significantly reduce freight costs."

However, it is not just port infrastructure that is lacking. According to EPC firm Odebrecht, its discussions with the Chamber of Construction and other development organizations indicate the previous government built up a \$6 billion backlog in infrastructure investment. As well as spending money on modernizing the ports, the nation's domestic and industrial gas pipeline network could also do with an update. "It is good, but not good enough," said APLA's Diaz. "It is very easy to add new production to our existing infrastructure but we need to improve the capacity of these pipelines to accommodate the increased production of natural gas that we will see in this country."

Odebrecht is confirmed for a \$200 million project from the province of Córdoba to expand its pipeline system, but is awaiting a further \$300m in contracts across the country. Rival firm Techint is currently working on one section of the north-eastern natural gas pipeline, but says further expansion of the network into Misiones province, on the border with Brazil, is likely to be suspended. In terms of industrial gas pipelines, the firm looks to the upstream sector to provide answers: "We are analyzing perspectives on how much gas is going to be available in order to evaluate what sort of capacity needs to be developed," said Gabriel Rubacha, commercial manager for Techint's southern cone operations. "If the Bahía Blanca petrochemical complex sees expansion, there may be a need to have an additional pipeline to transport gas from Neuquén to Bahía Blanca."

Infrastructure questions then will be addressed only if the requirement is in place. Despite the need for more raw materials in Argentina, a lack of foreign investment and limited dollars in the bank have kept plans for new refineries and petrochemical plants off the table. Low international oil prices have also stifled appetite for growth: "In terms of building a new petrochemical plant in Argentina, the starting point will be the normalization of international oil prices," commented Odebrecht's business development director Pablo Brottier. "The earliest we could see a new world-class plant come online in Argentina – if the oil prices start to recover this year – would be 2023."

Techint, however, takes a different view: "Companies will look at the big picture and make decisions based on their long-term strategies. We will probably see some activity in this regard in late 2016," said Rubacha.

Despite the uncertainty surrounding the issue, Argentina's EPC firms are adamant that they are ready for the next wave of expansions and new builds, using the experience they have built up in other sectors and jurisdictions over the past decade. —



Adrian Mascheroni

General Manager
AESAs (PETROCHEMICALS)

Could you provide us with an overview of AESA's work with the petrochemicals industry and the various projects the company has worked on?

We managed some petrochemicals projects around 15 years ago but, over the last decade, our main focus has been on refineries and gas projects. As petrochemical investment comes into the country, particularly from players such as Dow and YPF, AESA can be very supportive of EPC projects. Our first petrochemicals project was a small refinery in Bahia Blanca. We have increased our capabilities since that time, enabling us to work on projects such as YPF's La Teja refinery in Montevideo, Uruguay and its La Plata refinery in Argentina.

Could you tell us more about the current coke project you are working on and how the successful completion of this project will affect AESA's outlook in Argentina?

There will be three main phases of this project: running hydraulic testing of the pipelines, isolating the pipelines and the

pre-commission and testing phase. This should enable us to bring this project in on time and will be a great accomplishment for both AESA and YPF. It should also open doors for us in terms of working with other companies in the refining and petrochemicals sectors.

What role will AESA play in YPF's petrochemicals strategy to increase home-grown production?

As we are a contractor in the market, our main contribution will be as part of the construction contractors in partnership with other players on this EPC project. There are fewer key players at the moment with the exit of Skanska, which is good for us, but poor for the country as it reduces competition. The main challenge for the future is to develop construction companies that are able to implement these complex projects. —

AESA

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AESA is a YPF company operating in the oil & gas, refinery and petrochemical industry for over 65 years.

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 Tel: (+54) (11) 5441-6000 / 6800 | infoaesa@ypf.com | www.aesa.com.ar | Contact: Adrian Mascheroni, General Manager



Gabriel Rubacha

Commercial Director Southern Cone
TECHINT ENGINEERING
AND CONSTRUCTION

“

Even though worldwide we are better known for pipelines, Techint built most of the big petrochemical complexes here in Argentina.

”

Could you provide us with an overview of Techint Engineering and Construction's operations in Argentina?

Even though worldwide we are better known for pipelines, Techint built most of the big petrochemical complexes here in Argentina; we have a strong background in the petrochemical sector, as well as oil & gas, refining and other markets. We worked on all YPF's refineries and recently on two of the expansions of Axion's refinery in Campana, when it was still managed by Exxon. In 2014, we were awarded a contract for another project at the La Plata refinery, but this has since been suspended. We are establishing a base in Neuquén province in order to provide services for oil companies there.

Although there are many construction companies which have experience in executing projects, we are probably the only remaining engineering, procurement and construction (EPC) company in Argentina able to execute a major EPC project.

Could you tell us about some of the projects Techint has worked on, telling us why you were awarded the contract?

We teamed up with Snamprogetti on building the Profertil urea and ammonia plant, a lump-sum turnkey project which was at that time the largest single facility of its type ever built. For these types of projects, clients typically look for certain differentiating technologies, processes or licenses and we had that in our 50/50 joint venture. We believe we provide added value to our customers, giving assurance of completing projects on time and within schedule. We are currently building one section of the northeastern natural gas pipeline, which is the only section close to completion. We executed this project in time, before the wet season, ensuring we will be able to stick to our original schedule.

Techint has in-depth knowledge of the technical standards, laws and regulations in the markets you operate in. Could you tell us more about the situation in Argentina?

Techint has been present in Argentina for 70 years, so we have an in-depth knowledge of the working environment here. We know about the real level of productivity and can cost our projects accurately. We also pride ourselves on our safety culture, which we put above all other activities. Our

standards are probably above our competitors, but we believe it is worth maintaining as one of our key principles. As a company, we are chosen for projects because of the added value we can bring, and not just because we are more competitive. In terms of the environment, we believe having a clean site is not only environmentally sound, but will also be safer.

What is the situation like for qualified personnel in the EPC industry and does Techint have any initiatives in place to promote jobs in the sector?

Today we have a good balance of young and qualified personnel. However, if large projects in the Vaca Muerta region go ahead simultaneously, or the mining sector rebounds, we will start to see a bottleneck in terms of staffing. This means we have to compete on salaries.

Techint has a summer internship program for students in their final year of university, which can lead to a permanent position with us in the future. We also have our young professionals training program, whereby our new hires are sent to work in all areas of the business to gain experience. Most of the senior management personnel in the company have been trained on this program.

What is your outlook for the future of the petrochemical industry in Argentina?

I believe a key component for future projects is the international price of oil, although it is not the unique factor that will affect investments. Companies will look at the big picture and make decisions based on their long-term strategies. We will probably see some activity in this regard in late 2016.

Having spent 70 years in Argentina this year, could you perhaps tell us your vision for Techint into the future?

We have big expectations for Techint in Argentina and aim to return to our position as industry leader. Even though we were very active in oil and gas and mining during the last decade, we have not had as big a market share as we would like here, but we held a strong position in other markets. We believe there are opportunities where Techint can add significant value to upcoming projects, building on our experience from other jurisdictions. We are pushing hard to have a greater involvement in this new era for Argentina. —

Ricardo Vieira & Pablo Brottier

RV: CEO
PB: Business Development Director,
Industrial Engineering
ODEBRECHT ARGENTINA



RV

Could you provide us with a brief introduction to The Odebrecht Group and Odebrecht's presence in Argentina?

RV: The Odebrecht Group comprises 15 companies and several subsidiaries. The company has been present in Argentina for 29 years, initially via our infrastructure division. Our first focus was highway construction with local partners, before we opened our industrial engineering division and contributed to the country's oil and gas pipeline expansion projects. We work collaboratively and, with Braskem's arrival in 2013, the Odebrecht Group now has a growing presence within Argentina.

As a key player in Argentina's infrastructure projects, what is the current state of the country's public works?

RV: The chamber of construction and other key development organisations are indicating that the backlog in infrastructure investment is \$6 billion. This is principally in the areas of energy generation, transport and logistics.

Within the industry, we still have a backlog of contracted pipeline projects; we are awaiting \$300 million to be confirmed by the clients of gas pipelines and compression stations across the country's gas network. Tax, licensing, the access to gas and the industry's jurisdiction are some of the main challenges facing the petrochemical and chemical sectors. January 2016 saw us pre-confirmed for another \$200 million project to build three out of 10 gas pipelines, requested by the provincial government of Córdoba to expand their pipeline system. Although medium-sized projects are important, looking to the future we want to participate in larger infrastructure projects.

Technologically speaking, can Argentina compete internationally and what part is Odebrecht playing in bringing the latest technology to its projects?

RV: Although Argentina has technology, there is room for a new wave of improvements. Odebrecht's 70-year history and 30-year international presence ensures we have access to the latest technology for all of our projects, which is often the reason why we are selected. Although we are able to execute conventional EPC projects, if private investors or national and regional governments want to develop and construct a project requiring innovative engineering solutions, this is where Odebrecht can contribute most. Within the

group we also have Odebrecht Engineering and Odebrecht Defense and Technology supporting us in providing the most competitive and efficient solutions.

What are your thoughts on the future viability of a world-scale petrochemical plant in Argentina?

In terms of building a new petrochemical plant in Argentina, the starting point will be the normalization of international oil prices. For local shale production, the break-even point is around \$50 to \$60 per barrel. The country produces about 520,000 barrels of oil per day and 118,000 million m³/d of gas at present, and Odebrecht forecasts it will take approximately seven years to double production on a full development scenario. Taking into account the process for building a new petrochemical plant, which takes around seven years from start to finish, the earliest we could see a new world-class plant come online in Argentina - if the oil prices start to recover this year - would be 2023.

What projects are you currently engaged with?

Odebrecht is currently working on the Juan Manuel de Rosas water treatment plant, which will serve 1.5 million people. The \$1.2 billion project has taken six years to build and we are at 98% completion in time for the inauguration.

Our Del Bicentenario project is a waste treatment plant, inaugurated in June 2014 by the ex-President, Cristina Kirchner. Odebrecht has recently been awarded a new government project to increase treatment capacity by 333 cubic meters per second to be able to discharge treated water into La Plata River, which receives 70% of the sewage from the city of Buenos Aires. Once completed, this plant will be the second largest in the world.

The third project is called Soterramiento del Ferrocarril Sarmiento, an underground railway requested by the public. It will be built with a consortium of companies. The line is 70 years old and crosses the center of the city; with an influx of passengers this can cause congestion. We are building an underground tunnel so that the line will eventually work like the metro. With the latest technology, this \$2.5 billion project will take 56 months to complete. The project was paralyzed due to a lack of financial and political support. However, the new government has made the importance of this development clear and we are currently looking for financing. —

Argentina's chemical services sector: Seeing new opportunities in sustainability

By Harriet Bailey

Argentine operations play a key role in the portfolio of many of the world's leading service providers, while their capabilities have enabled Argentina's petrochemical and agrochemical companies to be at the forefront of technological advances. Global players such as solution provider Emerson and terminal storage company Odfjell have more than half a century's worth of history in Argentina, but the longest-serving company in this sector by far has to be technology specialist Siemens.

Active in Argentina since 1908, it works with around 50 companies from domestically-owned businesses to multinationals on new solutions for plant and warehousing challenges. "Our software covers the entire lifecycle of a plant, from design to automation, and can also simulate processes and manufacturing. Our solutions are linked with Industry 4.0, a new industrial revolution in which all technical processes will be able to be supported by a cloud-based network," explained Alejandro Alfredo Köckritz, head of the Process Industries and Drives and Digital Factory divisions in Argentina. "With our products, services and solutions we can support our clients' needs and add value to their business."

Bolland has been providing equipment and services to companies across the southern cone's hydrocarbon industry for almost 80 years, and is particularly active in the oil and gas, refining and petrochemical industries. Bolland also provides integral chemical services solutions to operational

problems via its Productos Quimicos Bolland brand, registered in 1998. "Bolland has participated in the oil chemical business since 1979. Over the last two decades, our company has achieved a relevant position in the Argentine market, and today Bolland's market share is more than 50%," stated commercial administration manager Adolfo Sánchez Zinny.

This area of Bolland's business is also one of its most innovative, developing different formulation lines for the treatment of oil, gas and water specific to each client's needs. It has operational bases and research and development laboratories in close proximity to all the oil and gas production areas in the country, enabling it to provide up-to-the-minute advances in its technology where they are most needed. "In terms of innovation, the chemical service sector is continuously evolving," continued Zinny, "not only because of the different needs of mature oil fields, which make up the majority of the fields in Argentina, but also due to unconventional fields such as Vaca Muerta."

General Electric is a newcomer to the Argentine market, but clients are proving eager to implement innovations which can help to reduce operational costs, increase efficiency, and adhere to regulatory requirements. "The local economy is in a transition period, so companies are seeking new ways to be more productive, and operating their assets by doing more with less. They are therefore receptive to new products and, in terms of our new digital

technologies, we are on a steady path of increasingly monitoring our customers' assets and developing new solutions to their challenges," outlined Roman Borrue, GE Water and Process Technologies' southern cone regional manager.

Green-friendly programs are often a byproduct of new technologies and increased efficiencies, benefiting both the environment and the company's balance sheet. When GE worked on a new cooling water treatment for YPF's Complejo Industrial Ensenada project in 2013, it was able to maintain key performance indicators for asset protection while using new molecules without phosphorous, meeting environmental targets in the process. "At the beginning we were able to deliver corrosion rate specs, but at a higher cost. To keep within YPF's budget, we had to reduce water and chemical consumption at this site. This was the most interesting challenge because it required changing plant water usage habits. Overall, our solution achieved asset protection, environmental targets and economic savings," continued Borrue.

Taking its lead from North America and Europe, the new administration in Argentina has created a sub-secretary focused on energy efficiency, as awareness of the benefits of environmentally friendly measures on reducing operational costs becomes apparent. Siemens carries out sustainability audits on its own business units to make savings, and feeds this knowledge into its systems. "In terms of where a company can make savings, 70% of energy consumption is related to motors. By using high-efficiency motors, companies can reduce their consumption by 20%," said Köckritz.

According to gas supply company Air Liquide, new regulations are driving the need for greener alternatives in industry. In turn, companies aim to be ahead of the curve and ensure their clients are using future-proof technologies wherever possible. As noted by Gonzalo Ramón, managing director for Argentina & Uruguay, increasing legislation will bring opportunities for the market: "The main change in the coming years will be the clean fuel regulations, which will mostly affect the refinery sector. These will be a game-changer, with the demand of hydrogen for refineries increasing significantly." —

Adolfo S. Zinny

President
BOLLAND



Bolland's Productos Químicos Bolland was registered in 1998. Could you provide us with an overview of the company's chemical services segment and how it has developed over the last two decades?

Bolland has participated in the oil chemical business since 1979. Over the last two decades, our company has achieved a relevant position in the Argentine market, and today Bolland's market share is above 50 %. We serve all the oil companies that operate in Argentina.

Could you introduce us to your product basket and any flagship products used in the chemical services sector, such as the BX 200 Series Biocide System?

Bolland provides the oil companies with a wide and complete range of chemical products. Among them are demulsifiers, friction reducers, corrosion inhibitors, scale inhibitors, biocides, hydrogen sulphide scavengers, oxygen scavengers, scale removers, paraffin/asphaltene inhibitors, hydrate inhibitors, foamers, defoamers, flocculants, dispersants, reverse emulsion breakers, specific solvents, etc.

Why is Bolland the oilfield chemicals service provider of choice, and will the company remain in this position now that import restrictions have been lifted?

We have a thorough understanding of our customers' needs. And we are very committed to developing "tailor-made" solutions for their particular technical situations. Bolland does not only provide chemical products, but it also applies those products in the oil field. So, we are 100 % responsible for the results of our service. Import restrictions have not impacted on our business and we believe that nothing of the sort will happen now that these restrictions are lifted.

Could you tell us more about Bolland's research and development laboratory and the importance of innovation in the chemical services sector?

In our opinion, laboratories are a key issue for the development and control of our chemical business. Bolland has a main research

and development laboratory and it also has laboratories in each of the principal oil fields we serve to control our business and the quality of the solutions we apply. As per innovation, the chemical service sector is continuously evolving. Not only because of the different needs of mature oil fields, the majority of the fields in Argentina, but also due to the non-conventional fields, like Vaca Muerta.

What emphasis is placed on operating sustainably within Argentina and what can companies do to be more environmentally friendly in their operations?

The Argentine oil industry has to recover productivity in order to assure sustainability. To do so, all the industry players (operating companies, oilfield service companies, unions, suppliers, contractors, the Government) have to participate in an open discussion to define a program approved by consensus to improve operating efficiency. Nowadays, the environment is also a key issue for the industry and Bolland is particularly committed to developing its activities taking into account all the environment regulations set forth by the Argentine Government.

With the new government in Argentina and an opening up of the market, what do you expect for Argentina's petrochemical industry in the medium term and how will Bolland continue to play a role in it?

Bolland's competitors in the petrochemical business are all international companies. And almost all the leaders are operating in Argentina. So, we do not expect that big changes will take place due to the new rules of the game.

We are optimistic about the future of the industry and the future of Bolland. —



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Marcelo Pedriel

Commercial Manager
ODFJELL TERMINALS TAGSA



Can you provide some historical background about Odfjell Terminals in Argentina?

Odfjell inaugurated the Dock Sud terminal in 1969, the company's first in Argentina. From Argentina, Odfjell spread throughout other terminals in South America and then to the world. Odfjell's Dock Sud terminal started with eight tanks and now has 101 tanks.

In the mid-1990s, the Campana - Zárate industrial area began to rapidly develop. Given this industrial development, Odfjell identified the necessity within the market for a new terminal in Campana, which is 70 kilometers (km) north of Buenos Aires City. While the Dock Sud terminal is established on land belonging to Buenos Aires Province, the Campana terminal is established on land belonging to Odfjell.

Odfjell inaugurated the Campana terminal in 1998. The Campana terminal started with 42 tanks and now has 102. Many of the goods that pass through Odfjell's terminals relate to the petrochemical, chemical, and fuel activities in the Buenos Aires – Rosario industrial belt, where clients in these industries need proper installations to receive their imported goods.

Odfjell has served the petrochemical and chemical industry in Argentina for the last 50 years and has served the main multinational chemical, petrochemical, and oil companies. Services provided to the petrochemical and chemical industry constitute about 65% of the company's revenue in Argentina.

What is the relationship between Odfjell SE, the Odfjell Terminals South America, and Odfjell Terminals Tagsa S.A.?

Odfjell Terminals Tagsa S.A. (OT Tagsa) is part of the Odfjell Terminals South America. Odfjell SE and the South American Group are separate entities. Odfjell SE started operating in the early 20th Century and is now traded on the Oslo Stock Exchange; the South American Group began its activities in 1969 when the Dock Sud terminal was inaugurated and is now privately owned and operated by the Odfjell family with headquarters in São Paulo. The South American Group owns companies in four South American countries. Each country has its own company management, yet operate under the Odfjell Terminals brand name. The four country-specific companies are Tagsa in Argentina, Terquim in Chile, Granel Química in Brazil, and Depósitos Químicos Mineros in Peru. Though Odfjell SE is a separate group, the terminals of the South American Group are associated terminals.

Marcos Sabelli, YPF's chemical executive manager, has outlined a vision for an Argentine petrochemical industry that relies less on petrochemical imports, particularly those of specialty chemicals. Does this vision pose a risk or an opportunity for Odfjell?

Though Odfjell provides services for Argentine exporters, the company specializes in handling imported chemical goods. Higher volumes of imports certainly benefit Odfjell, yet fewer imports of specialty

chemicals would not necessarily adversely affect the company. Even if Argentine producers substitute the import of certain specialty chemicals, those chemicals might still need certain raw materials imported. Moreover, Argentina will continue importing certain chemicals for some time. For example, Argentina does not have the necessary scale to build monomer plants (raw material for plastics) whereas Brazil does. The greatest risk for Odfjell in Argentina is a general slowdown in the chemical industry for both imports and exports.

How do the goods received in Dock Sud and Campana differ?

Before 2012, Odfjell serviced the same goods in both Dock Sud and Campana. After 2012, the Dock Sud terminal almost exclusively serviced clean petroleum products (CPP) such as diesel, gasoline, and other fuels after Buenos Aires Province banned the storage of non-CPP products. Odfjell is now talking with the Dock Sud Port Authority to allow storage of products other than CPP. In Campana, Odfjell can currently receive any product, which must often be transported 70 km back to Buenos Aires City.

Does Odfjell plan to expand its storage capacity in Argentina?

Like many Argentine companies, Odfjell has delayed new investments aimed at expanding the company's storage capacity as a result of capital controls. Odfjell's last expansion was in 2013, which raised the company's number of tanks to more than 200. However, OT Tagsa's shareholders regard Argentina with optimism in anticipation of positive reform.

OT Tagsa is particularly interested in the increased activity generated by the development of Vaca Muerta and unconventional hydrocarbon resources. Increased hydrocarbon production could require more capacity to transport, store, and export the extracted resources; it will also require the construction of another refinery, which would require CPP-related services.

OT Tagsa tends to expand its capacity in anticipation of increased future demand. Once the company perceives sustained growth in the petrochemical and chemical industry, Odfjell will make the necessary investments to accompany that growth with new tanks. —



Marcelo Carugo

Director Global Refining
EMERSON PROCESS MANAGEMENT

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We have strong hopes for Argentina in terms of both chemicals and refining and plan to make investments in both areas.

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Can you provide an overview of Emerson Process Management in Argentina and the services and products it provides client companies?

Emerson is a manufacturing company that provides industry solutions, within which Emerson Process Management provides automation solutions to the process industries. I lead an industry solution group for oil refineries and petrochemicals, providing solutions to improve availability, reliability and operations, for example by reducing energy consumption with more flexible operations.

We have seen the trends for clean fuels and reduced emissions globally from a regulatory compliance point of view, and work with customers all around the world towards achieving regulatory compliance in the most cost-effective way. Our efforts are directed towards reduced carbon dioxide emissions and continuous monitoring of emissions in line with regulatory compliance. With Project Certainty, our tools, technology and early engagement have enabled projects to achieve up to a 20% reduction in cost without impacting on schedules.

Another industry trend in the downstream industries is the integration of capital projects during turnarounds. We have seen petrochemical plants increase their turnaround budget for capital projects by between 10% and 50%, in order to increase reliability or operational efficiencies, and without increasing turnaround time. Although leading companies have been able to leverage the integration of capital with turnaround time successfully, other companies are not managing this as effectively.

How important is Argentina to Emerson's global strategy, and how significant is the chemicals segment to the company?

We have strong hopes for Argentina in terms of both chemicals and refining and plan to make investments in both areas. Argentina has been suffering due to not being self-sufficient in the oil and gas segment and having to rely on imports to satisfy public and industry demand. The advent of shale gas has opened up many opportunities for the chemical environment in Argentina. Given current pricing,

Argentina faces similar opportunities to the United States. Agrochemicals are also a key part of our businesses in Argentina and Brazil, and could be easily furthered by shale gas. In the plastics area, ethane crackers and polypropylene are an interesting area that we have been involved with for many years.

What are customers looking for from Emerson and how can you provide them with tailored services?

In many cases, we start our work with customers by reviewing their top initiatives and how technologies will enable their goals. From this point, we derive a matrix of short-term projects that will have an impact in less than a year, and develop a set of intermediate and longer-term projects that will have more impact but will also require more time and investment.

What are some of the latest technologies Emerson has implemented or has in the pipeline?

Over the years, our new sensor technologies and the possibility of wireless deployment of these technologies online has created more cost-effective solutions for our clients. Although sensor prices have reduced, their functionality has increased with improved data and analytics. Improved software is also enabling the provision of meaningful data and analytics to companies. This changes the game from waiting for failure to occur to being able to predict what will happen and taking preventive action.

Does Emerson Process Management have a final message for our readership?

The future for Emerson is bright and we have had a strong presence in Argentina since 1960. Given that the shale reservoirs have opened up opportunities for Argentina, this will hopefully lead to investment because this is what Argentina has been lacking in the past. The strategies we are running globally today are helping customers achieve flexibility and leadership positions in their industries whilst maintaining regulatory compliance. The combined factors of conducting projects on time and within budget will be extremely helpful to Argentine customers. —

Eduardo Pavani & Roman Borruel

EP: Regional Executive Latin America
RB: Regional Manager South Cone
GENERAL ELECTRIC WATER & PROCESS TECHNOLOGIES



EP

GE Water and Process Technologies is one of six business divisions of GE Power and Water. Could you tell us more about this segment's development?

EP: GE acquired this business 14 years ago and, from that time, GE has built a platform to address the challenges surrounding water. Today, GE has the capabilities to solve the toughest challenges in this regard. We customize solutions to the water challenges faced by our customers and we do this with an environmentally friendly focus. The next step is to transfer GE Water from an industrial company to a digital company. GE is building a new platform called Predix, which will be used as a core for all the applications for digital services. We plan to improve our services to customers with continuous monitoring of their assets using the power of the internet. Currently, we have more than 600 different customers' assets connected to our platform centers, located in Pennsylvania, China and Belgium, and our Latin American platform in Sao Paulo.

RB: We have a combined portfolio that includes chemicals, equipment and analytical instruments. In terms of the chemical segment, we have a portfolio for water treatment that includes cooling, boiling, and wastewater, and we have a process portfolio for refining, chemical processes and oil and gas.

How important is Latin America, and Argentina specifically, to your overall corporate strategy?

RB: Argentina has an energy deficit and GE is in a strong position to help the country with its energy supply. We are able to help not only with chemical applications but especially with equipment to produce and treat water.

In terms of clients and partnerships, why do clients choose GE Water and how do you work with them to create customized solutions to their problems?

RB: Our approach is to seek long-term partnerships with our clients rather than mere transactional deals. We are looking for solutions in order to reduce their operational cost, increase efficiency and productivity while meeting regulatory requirements.

EP: We do not sell products or services; we sell value. We also have a Value Generation Plan (VGP) document which we share with our

customers. Communication, environmental health and safety, asset protection and value-added projects are the four components of VGP.

Would you be able to share a case study of a particular project in Argentina?

RB: We carried out a project with YPF CIE (Complejo Industrial Ensenada) in 2013. We were in charge of cooling water treatment, but new regulations meant that phosphorus content in wastewater had to be reduced to meet environmental targets. Phosphorus is a key component of the cooling program as a corrosion inhibitor, so we had to rethink our cooling program using new molecules without phosphorus, whilst maintaining the key performance indicators for asset protection. At the beginning we were able to deliver corrosion rate specs, but at a higher cost. To keep within YPF's budget, we had to reduce water and chemical consumption at this site. This was the most interesting challenge because it required changing plant water usage habits. Overall, our solution achieved asset protection, environmental targets and economic savings.

Could you tell us about some of your new technologies and how receptive Argentinian companies are to new solutions?

RB: The local economy is in a transition period, so companies are seeking new ways to be more productive, and operating their assets by doing more with less. They are therefore receptive to new products and, in terms of our new digital technologies, we are on a steady path of increasingly monitoring our customers' assets and developing new solutions to their challenges.

What is your vision for GE Water and Process Technologies in the future?

EP: GE is leading digitalization and the digital platform. Our aim is to be more connected with other parts of GE and to provide more digital solutions. We hope to be more aware of the challenges that our customers face and addressing these challenges collaboratively. Water is a scarce resource that will become increasingly limited in the future, so we look forward to provide solutions to solve customer water challenges. —



Alejandro Alfredo Köckritz

Country Division Head Process Industries and Drives / Digital Factory
SIEMENS S.A.

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Siemens has been in Argentina since 1908, which is a particularly long time compared to our competitors.

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Could you provide us with a brief overview of the company's operations in Argentina and any recent key milestones?

Siemens has been in Argentina since 1908, which is a particularly long time compared to our competitors. We have a large portfolio of products and services, as well as expertise and know-how in applications. Siemens can also provide concept engineering, process engineering and process instrumentation to the oil & gas and petrochemical industries and we are looking forward to putting that to good use in the expansion plans of the petrochemical cluster in Bahía Blanca.

What services, products and solutions does Siemens offer and are these specifically tailored to the needs of Argentine companies?

Siemens' Vision 2020 is based on three pillars: automation, electrification and digitalisation. Our software covers the entire lifecycle of a plant, from design to automation, and can also simulate processes and manufacturing. Our solutions are linked with Industry 4.0, a new industrial revolution in which all technical processes will be able to be supported by a cloud-based network. With our products, services and solutions we can support our clients' needs and add value to their business.

We have already developed a solution for a global agrochemicals company here in Argentina, which will subsequently be rolled out to the company's operations worldwide. Argentina is a major supplier of cereals and soybeans for the world, with huge potential for growth and excellent engineers. It makes sense that our country would be chosen to develop services for multinationals.

Could you tell us more about the nature of Siemens' clients in Argentina and any added value services you can provide?

As well as serving multinationals, we also provide solutions for domestic companies in Argentina. Such companies do not need to come up with their own technology when we already have the solutions for improving their plants, energy distribution and warehousing capabilities. Siemens has 50 major contracts with Argentine companies to provide aftercare servicing 24 hours

a day, seven days a week. We have been committed to our clients for the last 108 years in Argentina and will support them at any time. Furthermore, Siemens can also be of assistance in creating new machines across many industries, such as a solution for sowing soya in the agrochemical industry.

What is your perspective on the provision of technical education in Argentina and what initiatives does Siemens have in place to promote the teaching of STEM subjects?

With the knowledge we have in Argentina, we have a position as a benchmark for education in the region. Because our standards of education are very high, and specific technical specialisation is required to work at Siemens, many people learn additional skills once they have started with the company. Through the Siemens Foundation, we provide university students with lab training and workshops, while some of our employees are also lecturers at the country's universities. Other university lecturers are Siemens solution partners and receive free training, as they provide the teaching for the next generation of Siemens employees. The company also supports a technical high school and, for other schools around the country, we hold a competition based on energy efficiency or resources. This is judged by a committee of university lecturers and industry leaders, with the winner coming to Buenos Aires and receiving a gift for the school. We also take school children on trips to our plants to see automation processes in action.

What can we expect for the future of foreign investment in Argentina and what are your hopes for Siemens in the future?

Foreign investment will arrive in Argentina. We need stable conditions for investors to be sure their money is safe in this country. For Siemens, we have to go to the industry and show them what we can do with Argentine engineering, while simultaneously emphasising the support of a global company with global products and solutions. We must lead the way in creating solutions that add value in all our clients' production processes and providing reliable services throughout the country. —



Eduardo Rosa

President
RESTEC

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Because the chemical industry in Argentina is seeing rapid growth, and 90% of internal transportation is provided by trucks, we are seeing numerous safety issues.

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Could you explain the reason behind Restec's formation in 1990 and the situation for the chemical industry at the time?

The company was born out of the necessity for improved safety in Argentina. In the 1990s, emergency response teams did not exist in Argentina or Latin America as a whole. At that time, the petroleum company Esso, which is now Axion, created a partnership with my father to provide such services. He started with one pump, one hose and a lot of determination. In the early days, response groups were non-specialized firefighters; however, we saw the need for a specialized response team and decided to go to the United States to learn their methods. The first major emergency we attended was in 2001 and the company grew rapidly in the early 2000s. This led to a restructuring of our operational capabilities and the purchase of more specialist equipment and vehicles.

How has the company developed over the last few years and what sort of competition does Restec face?

In 2015, Restec attended 100 emergencies, averaging just over eight emergencies per month. In 2016, we saw four emergencies in the first month of the year. Because the chemical industry in Argentina is seeing rapid growth, and 90% of internal transportation is provided by trucks, we are seeing numerous safety issues.

At this point, around 75% of the chemical companies in Argentina use Restec's services; companies such as BASF, Dow, Chemours and Petroquímica Cuyo are among our 87 clients. Although there are two competitor companies in Argentina, the remaining 25% of the market who are not in our client base has less to do with this competition and more to do with a lack of investment in safety by small- and medium-sized companies. Safety was not a priority during the last 12 years of government and these companies have not yet seen the importance of investing in this area.

Do you have any initiatives in place to improve the understanding of the importance of safety among such companies?

This is one of our additional client services:

we provide safety advice both at the plant and through the entire transportation chain, covering such issues as correct chemical signage, fire extinguishers and safe routes. We also provide extensive auditing with a focus on the cost-effectiveness of client improvements. Internally, we hold regular training sessions including weekly response team training and the maintenance of our trucks and vehicles.

Following an emergency, what services can Restec offer to deal with environmental issues?

Restec is the only company to incorporate applications for both hazmat response and bioremediation in one service, and both services require separate certifications. This is very difficult to do across Argentina as it is a federal country and we are required to have certifications for every province. Obtaining these certificates is a long process which can take up to three years per province.

After the incident is contained and the threat to life is removed, our bioremediation teams take samples of the surrounding soil and rivers for laboratory analysis. Depending on the nature of the spill there are broadly two options: we can take the soil and dispose of it in a hazardous waste plant, or we can provide biophysical remediation at the site. Although the latter option is more time-consuming and expensive, it has a less detrimental impact on the environment. Because there is no obligation for a client to have an emergency response team as part of their operations – unlike in neighboring Chile and Brazil – the choice of procedure is made by the client and local authorities.

What can we expect for Restec by the end of the decade and your 30th anniversary?

We hope to continue to be working in partnership with Suatrans. The future of this industry is in bioremediation and is a key area of focus for us. We also aim for official accreditation for all of our employees; training and experience is essential for our company and helps us attract more clients. In the medium term we hope to achieve ISO 2100, ISO 18001 and ISO 1400 certifications and will enter our application in the near future. —

Alberto Sosa Crosa & Daniel Campos

AS: Managing Director
DC: Operations Manager
**INTERTEK ARGENTINA,
BOLIVIA, PARAGUAY, URUGUAY**



AS



DC

Could you give a brief introduction to Intertek and Argentina's role within the global company?

AS: Founded in 1885, Intertek is a multinational company, headquartered in London and present in 120 countries worldwide, with more than 1,000 laboratories and 35,000 employees. We work in a wide range of industries including oil and gas, mining, agriculture and pharmaceuticals, among others. Intertek is the leader in certification and auditing of operations in all markets linked to oil and commodities.

When our Buenos Aires offices opened in 1984, our main focus was in oil and petrochemicals as Intertek was a strong player in auditing and inspection in this industry on a global scale. As time went on, we began offering services to the agricultural sector and expanding our offices and laboratories across Argentina. Buenos Aires is the headquarters for our Paraguay, Uruguay and Bolivia operations and for our agricultural services across Latin America.

Which industries does Intertek serve in Argentina and why do clients choose Intertek as their auditing and certification partner?

AS: With Argentina becoming a world leader in agriculture, producing 100 million tons of grains a year, we maintain a strong focus on the sector's operations and exports. One milestone was installing two important laboratories in Rosario to cater to the agricultural sector's needs. Our other strengths lie in oil and gas and petrochemicals, and we have a new project auditing the aerospace operations of chemical companies. We also offer social, food and industry audits, as well as systems certification.

What are the critical points in the value chain that require further control measures and how can Intertek help companies reduce risk in a cost-effective manner?

AS: Quality is fundamental throughout and we provide independent reports from raw materials to finished products. In every business deal there always needs to be a control check on product quality. Every time there is a change in production or commercialization, a control is required and we define these critical points with the client. They want to know what is really happening in both their

plants and in the industry and Intertek provides trusted results. For those clients who really want to keep a check on the whole process, this is not seen as a cost but as an investment, as they are saving money by reducing risk.

How does Intertek ensure their employees meet the high international standards the company promises?

AS: We started with 10 employees and now have more than 400. We hire locals in each of our offices in the region as Intertek's policy is to promote personal development and training in country. Nowadays we can carry out 100% of the testing here rather than sending samples to the United States.

DC: The International Federation of Inspection Agencies (IFIA) binds all the certification agencies together globally. All of our inspectors are certified by IFIA both in petrochemicals and agrochemicals as IFIA is the only body that offers transparency of expertise and operations around the world.

How has the chemical industry developed in recent years and what are your projections for the coming years under the new government?

DC: Argentina is a nation which has oil, but the country has been a net importer of oil in recent years. Many big companies have reduced their imports, and have cut back on some of their manufacturing operations in Argentina. The industry has dropped off in this respect and we look to the new government to see a resurgence in manufacturing.

AS: We are seeing high expectations for these first few months of the new government; companies here have the opportunity to go abroad and offer their services globally, for example. It is still too early to make predictions but the picture looks promising. It is a good time to invest in Argentina, not only because of the opportunities but also because of the improved public-private relationship; both sides recognize the need to work together to see growth. For Intertek, we are reinvesting in the company and moving our Rosario laboratory to an industrial park. Santa Fe is an industry hotspot and we will continue to invest there, building on our biodiesel, hydrocarbon and agricultural laboratories. —



DISTRIBUTION AND LOGISTICS



"Argentina needs to focus on increasing infrastructure investments in routes, railways, storage and ports to support our future. With these investments, we will be able to comfortably supply new companies as they increase investment in Argentina."

- Luciano Milito,
Commercial Director,
Logistica Milo

A unique situation: chemical distribution in Argentina

Argentina's chemical distribution market is highly diversified; around 100 companies operate in the market, with multinationals competing for business alongside generations-old, family-owned firms. More than a decade of Argentina's closed economy prevented full-scale competition from taking place and smaller companies had the opportunity to develop specializations and embed themselves in regional markets.

According to international chemical distributor Arubras, which is focused on the Argentine market, small-scale distribution firms with fewer than ten trucks comprise 85% of Argentina's logistics services: "The number of chemical distributors is too high when compared with the size of the Argentine market. There are roughly 130 companies in operation today; this is mainly due to the fact that there are a large number of small- and medium-sized com-

panies in existence and companies favour maintaining personal relationships," stated director Marcelo Knobel.

A shared history and local knowledge appear to take precedence in an area lacking regulation; generic distribution companies have therefore been able to specialise in the chemical space. Integrated logistics provider Mesucan, a family-owned company founded in the 1960s as a general transportation business, has since special-

ized in chemical distribution. "The transportation market is very fragmented in Argentina. Low barriers to entry are largely what have caused this fragmentation. National Law 24449 regulates road traffic and safety, and a chapter in an annex to that law regulates the transport of dangerous goods," explained general manager Andres Gerschenson. "The provisions contained in that law are not very demanding."

This has led to a situation in which a distribution company can transport a truckload of hazardous chemicals one day, and innocuous consumer goods the next. The situation was able to continue largely unabated during the 12-year Kirchner administration, with the aim being to promote Argentine companies over their international rivals. Logistica Milo, a Buenos Aires-based company that has been around since 1905, also first established itself as a general transportation provider. It only started to specialize in chemical distribution over the last decade and now offers catered transportation, warehousing and tanking services. "Under the previous government, Logistica Milo had a lot of support, particularly in terms of the awarding of credit lines which allowed us to upgrade our fleet," explained general manager Victor Blanco.

The company was able to capitalize on the artificial trading conditions created by the previous government to position itself as a leader in the market, serving clients such as BASF, Sherwin Williams and Carboclor. International players, however, experienced the previous government's restrictions and promotion of local companies somewhat differently. Brazil's MCassab, for example, which opened its Argentina

office in 2007, experienced stalled growth and was forced to put some projects on standby.

With the opening up of the market by the new government, however, this situation is set to change. As multinationals look to establish their global brands in Argentina, local companies could find themselves either out of business or swallowed up entirely. Combined with the removal of import restrictions, which artificially enabled many smaller companies to continue operating, the chemical distribution market could look very different in just a few short years. "We expect the number of distribution companies to reduce by more than half over the next three years, with probably no more than five big distribution companies holding more than 80% of the market," explained Knobel. "This happened under similar conditions in other parts of the world such as the United States and Brazil, so it is reasonable to assume it will happen here too."

Brenntag, a global leader in full-line chemical distribution, believes the Argentine market is now in a state of transition: "Until December 2015, the chemical distribution market was significantly restricted. Rather than using our full capabilities, we were forced to conduct operations on an ad-hoc basis and couldn't move forward," said Martin de la Roza, general manager at Brenntag Argentina. "We will see more openness in terms of commercial interchange and international commerce, but will also see an increase in competition as distributors will be eager to take advantage of the ability to import goods."

Internationally, the number of chemical distribution providers is much more con-

centrated and, even in neighbouring Latin American countries, the situation is vastly different. The new direction in which Argentina's economy is heading should align it with the rest of the countries in the Southern Cone and make for much more predictable operations. "Typically, Brenntag and up to five other companies make up 70% to 80% of market volume, while smaller companies survive by taking niche markets," continued de la Roza. "If [Argentina's openness] continues, the chemical distribution market is likely to see some consolidation."

- Marcelo Knobel,
Director,
Arubras

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sebastian.aversa@bdpint.com

MENDOZA - BDP International SRL
Calle Pasaje Lemos N° 522 Piso 3°, Oficina B
Mendoza, Argentina
tel: +54 261-4250977, 4250894 fax: +54 261-4236068
enrique.noello@bdpint.com



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such as Petroken and Petrobras were unwilling to supply product on credit, and seeing that its clients were struggling to obtain favourable financing from banks, Grupo Simpa came up with a solution. “Dow Argentina grants its customers up to seven days to pay after receiving an invoice and our competitors allow between 30 and 60 days,” said president Adrián Gabriel Schwartz. “Grupo Simpa allows between 90 and 180 days and, as a result, our financing options have enabled us to become the largest petrochemical distributor in Argentina.”

Lack of financing options for end-users has also made petrochemical companies more cautious in terms of selling their products. Distributors have therefore taken on intermediary roles, with companies such as Grupo Simpa buying raw materials directly from vendors. “The world average for distribution sales as a percentage of total plastics sales is about 20%; in Argentina, it is about 40%,” continued Schwartz. International distributors, however, still maintain the advantage in terms of a recognized brand name and trusted working practices. The Kirchner administration’s failure to focus on the chemical segment’s role in the economy means international players have not learnt to trust the industry’s regulations as sufficiently protective. “The multinationals that operate in Argentina and Latin America often demand standards that are higher than national ones,” said Mesucan’s Gerschenson.

Those local players which have been able to prove themselves in this regard should not see any difficulties as Argentina’s new

commercial stance attracts the attentions of global chemical companies; however, newcomers to the market may also choose to use trusted global names from their existing jurisdictions. “Multinationals are now looking for distributors that can supply a product with the same quality and assistance throughout the entire region,” claimed Martin Font, general manager at MCassab Argentina. “Clients that operate in both Brazil and Argentina are happy to have a single company supplying them in both countries with the same degree of product quality and assistance.”

Restoring balance

One way in which multinationals might better trust Argentina’s regulations is in the overhaul of its customs requirements. Under the previous government, the country was ranked fourth in the world for having the most restrictive measures in place regarding international trade. One of these restrictions was the Advanced Affidavit for Imports (DJAI), implemented in 2012. Companies were required to submit affidavits for imported goods before completing transactions and before the goods could leave their port of origin, severely restricting the freedoms of Argentina-based firms to do business. “In the first six months after the government first implemented the DJAIs, the supply of certain imported chemicals fell and prices naturally rose,” explained Hirschen.

As well as impacting on the supply of chemicals, EPC providers were in some

cases unable to bring in technical equipment from abroad. The Federal Public Revenue Administration (AFIP) required companies to justify why they wanted to ship in equipment from overseas, with lack of availability in Argentina being an oft-cited reason. Argentine-Italian EPC firm Techint Engineering and Construction believes more should be done to manufacture such goods in Argentina: “In the last few years it has been difficult to import equipment or materials into Argentina,” said managing director southern cone Gabriel Rubacha. “For this reason, and in order to foster local industries, we are working to incentivize local companies to improve their technologies and provide alternatives to equipment manufactured abroad.”

DJAI was the subject of a number of complaints from the United States, the European Union and Japan, amongst others, and was subsequently found to be in violation of World Trade Organization rules on international trade. With Argentina only having until the end of December 2015 to resolve this issue, it was one of President Macri’s first tasks on taking office on December 10th. “Our new government made these amendments on 23 December 2015, replacing DJAI with SIMI, a new Integral System for Monitoring Exports, which grants automatic licences for all imported products,” outlined Sebastian Aversa, country manager for BDP International. BDP International is a third-party logistics firm headquartered in the United States and with operations in 270 cities worldwide. Around 80% of its operations in Argentina are focused on the chemical

industry and, like many companies, it has relied on imports for the majority of its business since 2011. “In our Buenos Aires office, 80% of the business covers imports to Argentina, which is the main business of foreign trade today as the export market across the country has dropped off,” said Aversa. “Imports decreased by 45% during the period of DJAI and we hope that we can regain these losses during 2016.” With the replacement of DJAI and the opening up of the market, it is hoped that Argentina’s import/export balance will normalize. Producers will be able to export abroad rather than simply supplying the domestic market and, with the opportunity to increase the amount and type of imported goods, supply chains need to be optimized.

Plugging the gap

It is here that companies are taking matters into their own hands. Although there is an awareness that the shelved and delayed infrastructure projects of the previous government will now be considered a priority,

businesses are taking the impetus provided by President Macri’s initial reforms to go ahead with projects which will provide short-term relief on already strained public services.

Celsur Logistica was established by a U.S. investment fund in 1995 and is now one of the top ten logistics companies in Argentina, with around 40% of its operations dedicated to chemical and petrochemical companies. Commercial director Hernan Sanchez believes improving Argentina’s infrastructure should be a key area of focus for the new government, but he is realistic about the lengthy timeline needed for real change. Although Argentina’s ports, currently operating at 50% capacity, will easily be able to double the volumes they handle, the country’s rail infrastructure requires investment.

Trucking services such as Celsur Logistica have an opportunity to plug the gap while additional funding to improve such services is approved. The 700-kilometer journey between Bahia Blanca and Buenos Aires currently takes around four days to complete by rail, “which is approximately three times as long as the journey would

take in Europe or the United States,” explained Sanchez. “Celsur Logistica has been working with Ferrosur Roca and Dow Argentina since June 2012 on a cargo transfer cross-dock station in Abbott. The station itself is 17,000 m² and enables the transportation of 34,000 tons of polyethylene pellets between Bahia Blanca and Abbott per month. Celsur Logistica’s trucking service is therefore a necessary alternative.”

The lack of alternatives explains why 90% of internal chemical distribution in Argentina is carried out by truck. With the high volume of trucks making long journeys with hazardous loads on Argentina’s road network every day, road safety is clearly a big issue for manufacturers and distributors alike. “Two years ago, the distribution playing field saw huge change with the arrival of a new road safety drive from the United Nations. It realised the issue was a global concern and launched a ten year-plan to improve road safety worldwide by 2020 and, as part of this, ISO 39000 was introduced, which covers global best practice for transportation,” explained Diego Folch, commercial manager at Buenos Ai-



Henry Hirschen
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res-based Crosslog. “This provided a solution to the problem, as the global standards override local laws.”

One way in which Crosslog has attempted to differentiate itself from its competitors is by focusing on environmental safety, adding value in a crowded market. This has included only hiring drivers who have completed one month’s intensive training with the Argentine Federation of Freight Carrier Business Entities (FADEEAC), rather than those who have only passed the mandated one-week course. “The environmental issues that arise from trucking are directly linked to road safety. If a truck crashes because the driver is too tired or inexperienced, the damage to the environment comes from the spillage of cargo,” continued Folch.

Restec, part of the Suatrans group of safety providers located across Latin America, is one of only three companies providing chemical safety services for chemical companies in Argentina. This is due to the fact that there is no obligation for manufacturers or distributors to have an emergency response team as part of their operations – unlike in neighbouring Chile and Brazil. “Around 75% of the chemical companies in Argentina use Restec’s services; companies such as BASF, Dow, Chemours and Petroquímica Cuyo are among our 87 clients,” explained president Eduardo Rosa. “The remaining 25% of the market has less to do with competition and more to do with a lack of investment in safety by small- and medium-sized companies. Safety was not a priority during the last 12 years of government.”

As well as addressing the infrastructure requirements of Argentina’s industrial sector, in order to expand capacity and generate efficiencies in the chemical distribution market, it appears a focus on safety and environmental legislation in this area is long overdue. The Argentine Association of Logistics Companies (Arlog), of which Celsur Logística’s Sanchez is also president, works with logistics companies and government to increase value in the sector. “The project to improve the railway line along the route was presented to the previous administration and was approved so, hopefully, the new government will follow through on the investment,” said Sanchez. “Considering we have not had this level of communication with previous governments, we are optimistic for the future.”



Hernán Sanchez

Commercial Director
CELSUR LOGÍSTICA

Could you tell us about the company’s operations in Argentina?

Celsur Logística is one of the top ten logistics companies in Argentina and has been present in the country for more than 15 years. It was established in 1995 by a U.S. investment fund to provide the first logistics support services to Walmart. In 2006, the company was acquired by a new investment group, comprising of several Argentinian executives. At that time, the company employed around 200 people at a 40,000 m² site and generated 22 million pesos in turnover; today, we have almost 1,000 employees, more than 120,000 m² at our facilities and see an annual turnover of 950 million pesos.

Could you tell us about the strategic vision that has made this type of growth possible?

The company is composed of a group of educated executives, with specific know-how and global operational standards, which makes us an attractive prospect for the multinationals. Our growth has come from two distinct areas: on a macro level, Argentina promoted the development of business between 2004 and 2008, and specific knowledge of how to do things makes a big difference. Celsur Logística also received a capital injection from Swiss investors in 2007, focused on the improving our information technology systems and infrastructure.

Between 2006 and 2008, grassroots work on the company was carried out, including a staff restructuring and a reorganization of our client base. Dow Argentina was also looking for a new logistics model and we implemented this with the company in 2010, alongside leading shipping company Log-In. Despite the current trend for contract logistics, we are focused on being a leader in the integrated logistics space. The majority of our clients are multinational corporations; 40% of these are chemical or petrochemical companies, 35% are automotive firms and the remainder operate in mass consumer industries.

What changes can we expect for the logistics industry in Argentina as a result of the new government?

By opening up Argentina to the world in terms of foreign trade, it may lead to greater productivity in our supply chains. In terms of improving the railways and ports, they will see change but we need to be patient, as it will not happen in the near future.

Could you tell us more about Celsur Logística’s joint venture with Ferrosur Roca and Dow Argentina?

Celsur Logística has been working with Ferrosur Roca and Dow Argentina since June 2012 on a cargo transfer cross-dock station in Abbott. The station itself is 17,000 m² and enables the transportation of 34,000 tons of polyethylene pellets be-

tween Bahia Blanca and Abbott per month. The train line between the two cities also continues onto Buenos Aires. The project to improve the railway line along the route was presented to the previous administration and was approved so, hopefully, the new government will follow through on the investment. Currently, the 700 km journey between Bahia Blanca and Buenos Aires takes four days, which is approximately three times as long as the journey would take in Europe or the United States, for example. Celsur Logística’s trucking service is therefore a necessary alternative.

As the President of Arlog, how important are associations such as Arlog for the chemical distribution industry in Argentina?

Arlog’s objective is to assist the government and companies in increasing value in the logistics sector. We focus on personnel and provide them with training and workshops. We also have a relationship with APLA, as the specialists in the chemical distribution industry, and have good contacts with the new government. They are interested in our ideas and projects and, considering we have not had this level of communication with previous governments, we are optimistic for the future.

What investment plans does Celsur Logística have to meet an increase in demand for its services and what are the company’s short-term goals?

We fully support the recent political developments incentivising exploration and production in Argentina’s unconventional resources. We have also added value with new services such as product packaging and subdivision of loads. For the immediate future, we plan to increase our productivity while trying to reduce additional costs as a result of inflation. Our next investment will be in specific logistics services, allowing for additional growth between 2018 and 2020. Finally, our most important strategic challenge is to double the amount of product we can transport to the rest of the players in the chemical value chain, while maintaining a high level of service. —

Martín de la Roza

General Manager

BRENNTAG ARGENTINA S.A.



Brenntag began its operations in Argentina in 2000 with the acquisition of Holland Chemical International (HCI). Can you identify some key milestones in the development of what is now Brenntag Argentina?

In 2008, Brenntag Latin America acquired Inquimex, which strengthened the company's presence in the Argentine chemical distribution market, broadening its product portfolio in polyurethanes, personal care, paints and coatings. In 2012, Brenntag acquired Delanta Group, which improved the company's position in the specialty market and elevated the adhesives, coatings, elastomers and sealants (ACES) division to one of our core business units. The purchase also enhanced Brenntag's access to the construction industry and increased our market coverage in Argentina. Most recently, in 2014, Brenntag Brazil acquired a local distributor of specialty solvents, which has an Argentinian subsidiary. Brenntag has grown in Latin America through acquisitions, which has resulted in above average growth.

Can you describe the strategy that has guided Brenntag's acquisitions in Latin America and Argentina in particular?

Brenntag's goal is to be the leading chemical distributor in any market in which the company is present. The best method of achieving premier status in a market is through continuous organic growth as well as by acquisitions. In Latin America, however, almost 90% of distribution companies are local and family-owned; HCI's regional presence motivated Brenntag's purchase of the company. Particular market and country conditions influence each decision we make.

How successfully has Brenntag been able to incorporate the companies it acquires?

Integrating the HR, commercial, and financial components of any acquired company is challenging. Given the Group's outstanding M&A track record, Brenntag has excellent M&A experiences both in Argentina and worldwide. The company has developed a degree of M&A expertise that has allowed us to quickly and effectively consolidate businesses. Though acquisitions inevitably require a pruning process to eliminate overlapping functions, Brenntag Argentina has kept around 80% of the commercial staff of the companies we have bought.

What are the main industries that have allowed Brenntag to double its sales in Argentina from 2010 to 2014?

The oil and gas industry now comprises a significant percentage of Brenntag's total sales in Argentina and has obviously been a major growth driver. The Argentine oil and gas industry is dynamic and

shows great potential in Vaca Muerta, located in the southern province of Neuquén, as well as some fields in the north. ACES and construction also significantly contribute to sales and profit. Moreover, Brenntag Argentina anticipates growth for the products it supplies to the agricultural industry, in particular food and feed, which currently comprises a small percentage of our sales.

What effect have economic decisions made by the new government administration had on the chemical distribution market?

Until December 2015, the chemical distribution market was significantly restricted; rather than using our full capabilities, we were forced to conduct operations on an ad-hoc basis and couldn't move forward. With the removal of some of these import duties and restrictions, we will see more openness in terms of commercial interchange and international commerce, but will also see an increase in competition as distributors will be eager to take advantage of the ability to import goods. The industry is now in a state of transition: we are lacking foreign investment to mitigate the new government's currency devaluation, which has seen the peso weaken, at the same time as experiencing low international oil and gas prices.

What can we expect for the future of the petrochemical and chemical industries in Argentina?

In the medium- and long-term we see huge potential for Argentina. It has already attracted new investments downstream; the agrochemical industry, for example, is growing and is demanding more chemicals. Many companies are seeing Argentina as an interesting market with exciting prospects, despite the not insignificant technological, logistics and costings issues which have to be improved in general. Competitive companies are backwards-integrated with oil and gas production, as well as derivatives. There is likely to be some consolidation among manufacturers as some smaller plants will not survive Argentina's new method of operating.

How is Brenntag in Argentina implementing the company's 2020 Vision?

Brenntag's 2020 Vision is composed of the following points: we are the safest chemical distributor, striving for zero accidents and incidents; we connect chemistry worldwide by providing the most effective industry channel for our customers and suppliers; we are the global leader in all our chosen markets and industries; we strive to provide a working environment where the best people want to work; and we aim to generate sustainable and high returns for our shareholders and all other stakeholders. —

Sebastian Aversa

Country Manager Argentina
BDP INTERNATIONAL

Could you provide us with an overview of the services BDP can offer its clients and any of the company's key specializations?

BDP in Argentina has 45 people split between Buenos Aires and Mendoza. Around 80% of our operations center on chemical 3PL solutions, transport and distribution, with 70% of this dedicated to servicing top chemicals accounts needs. The remainder of the business is related to automotive, agricultural, retailing and wineries in the Mendoza region. In Buenos Aires, around 75% of the business covers imports to Argentina, which is the main business of foreign trade today as the export market across the country has dropped off. We act as a third party logistics firm (3PL) for our clients, covering logistics documentation, transportation and warehousing in Buenos Aires and Mendoza, and our growth will center on our transportation offering around the country.

Aside from its international reputation, what makes BDP the distributor of choice for chemical companies in Argentina?

I believe it is our commitment to our customers and our differentiated product offering. We also have a great IT tool: BDP Smart is a superior tool and really popular with our customers. I'm not aware of a similar product from our competitors. It is not just a track and trace tool, as it also enables them to follow their invoices and P&L statements, run key productivity indicator statistics, and work closely with their data and systems. All the data they need can be extracted from it and they can visualize their operations. For our medium- and small-sized customers, our transportation and customs brokerage services are tailor-made.

Could you tell us more about the barriers to foreign trade, such as customs, permits and inspections, and how you can solve these problems?

Argentina's former government placed heavy-handed restrictions on foreign trade and used these restrictions as bargaining tools, which meant we had the fourth most restrictions on international trade of any country worldwide. In 2012, the government implemented its Advance Affidavits for Imports (DJAI), which required companies to submit an affidavit through the website of the Federal Public Revenue Administration (AFIP) before a commercial transaction could be completed and before

the goods in question leave their port of origin. The DJAI was found to be violating World Trade Organization rules, which we were asked to change. Our new government made these amendments on 23 December 2015, replacing DJAI with SIMI, a new Integral System for Monitoring Exports, which grants automatic licenses for all imported products. Imports decreased by 45% during the period of DJAI and we hope that we can regain these losses during 2016, which we view as a transition year. I think we will see a lot of companies return to Argentina with their investments.

What initiatives are in place to secure a ready supply of skilled personnel to work within the chemical sector?

It is very difficult to find qualified personnel, but Argentina has had to deal with so many crises over the years and that has given us great adaptability. We need to improve our level of education for future generations and promote the learning of second languages and the benefits of a university education. Internally, BDP has implemented a training program to provide regular training for our employees in IMDG, transport, customs, FCPA and the environment, among others. In order to succeed, our employees need to be prepared as well as their managers.

As a new member of CIQyP, how important are such associations to distributors?

Being a member of CIQyP is an important way for us to connect with our customers. This allows us to talk more regularly with our clients and exchange information.

What are your predictions for the future of the Argentine chemical industry in the coming years and for the future of BDP?

I believe Argentina will gain more foreign investment in both the upstream and downstream segments, which will have a knock-on effect on surrounding industries. For BDP, our main objectives are to continue our development and growth. We are actively looking for new customers and plan to double the size of our revenue and our employee numbers in line with the company's five-year plan. We are also working to open two new business corridors: one in the Región de Cuyo (Mendoza) with the Pacific Corridor (Chile, Perú, Ecuador and Colombia) and a second towards Brazil and Uruguay for the chemicals niche. —

“

Imports decreased by 45% during the period of DJAI and we hope that we can regain these losses during 2016, which we view as a transition year. I think we will see a lot of companies return to Argentina with their investments.

”

Tomás Hirschen

Director
HENRY HIRSCHEN & CÍA S.A.



Can you provide some background about Henry Hirschen (HH)?

Henry Hirschen was founded in 1948 and is a third-generation family business that has become one of the leading chemical distributors in Argentina. The company operates independently and is privately owned.

HH distributes chemical, plastic, and steel products to the following industries: iron and steel, plastics/polycarbonate, oil and gas, water and effluent treatment, cleaning products, agrochemicals/veterinary/animal feed, functional fluid/lubricants, paints/dyes/adhesives, leather/textiles, and cosmetics/food. Moreover, HH provides a wide array of support services such as financing services, fractionation, and storage, among others.

HH offers more than 300 products, imported from about 40 countries, and 55 different chemical producers. HH imports significant amounts of product from Brazil, China, and increasingly India (for both food and oil and gas). HH sees itself as the largest industrial distributor in Argentina in terms of value.

Can you describe the market trends since 2012 that have affected Henry Hirschen?

The petrochemical industry has been in wait-and-see mode since 2012. Though the market has grown, import restrictions have created an artificial market. The new Argentine government will likely liberalize the economy, which will likely include the easing of import restrictions. It is still uncertain which ones companies may win or lose once trade opens.

Nevertheless, HH has grown thanks to growth in strategic industries. In recent

years, HH has successfully supplied increased customer demand for modernization and the development of new products. In particular, the food, oil and gas, and cosmetics industries have demanded these kinds of modernizations as they closely follow international standards and global trends in the use of chemicals and new technologies.

In 2012, HH's sales revenue was \$30 million; in 2014, it reached about \$50 million.

Does HH educate clients about products that are not in high demand?

HH has educated customers in Argentina about chemical products that respond to the trend that aims to replace synthetic products with natural products in the food industry. The trend towards more natural products is one that HH has seen at international expositions.

How has HH adapted to the 2012 government decision to restrict imports by requiring companies to submit import affidavits known as DJAIs?

At first, HH was not sure the extent to which the DJAIs would curtail imports. The government initially pushed companies to export as much as they import, which required a significant amount of government supervision and inquiries about company sales. Companies that have been able to quickly adapt to changing import requirements are those that have wielded a competitive advantage over competitors. For example, the government previously decided to reduce import licenses for two months. Less competitive peers might have found out a month after this kind of announcement; HH would react within days and was able to adapt accordingly.

In the first six months after the government first implemented the DJAIs, the supply of certain imported chemical products fell, and prices naturally rose. Eventually, however, HH and its peers learned to efficiently process the DJAIs and were able to better supply customers, which led to the normalization of prices. Now that a new government will likely allow more imports, the supply of certain products should rise, and prices should fall.

Argentine companies have had little access to international capital for a number of years. How important have HH's financing services been throughout this time?

The difficulties that Argentine companies have faced in accessing international financing has made HH's financing services all the more important. Though most companies around the world have taken advantage of cheap financing thanks to low interest rates in the United States, Argentine companies have not had access to this financing. Nevertheless, HH has provided trusted clients with the financing they need, which is especially important in industries with low margins and high financing needs.

What is HH's three-year outlook?

HH envisions two major projects for the short term. On the one hand, HH will increasingly focus on the industries where customers are leading the company, especially on its commitment to the food industry as one of Argentina's most important areas of focus. On the other, HH plans to increase the company's warehousing capacity once the economy stabilizes and shows growth. —



Marcelo Knobel

Director
ARUBRAS

Could you provide us with an overview of Arubras from its founding in 1992 to the present day?

Arubras began life as a small family company and has since grown to become an international chemical distributor, focused on the Argentine market. We bought out a former partner in 2002 and merged with competitor Treasure. This union combined two complementary product portfolios. The company moved into new offices in 2010, with the aim of growing the company; however, the challenging political and economic situation at the start of the last decade prevented this. Nevertheless, business remained profitable because of the higher margins in existence when restrictions affected product imports. Furthermore, in the recent past, local margins exceeded normal

international figures compared to the margins of international companies who were working in commodities.

The low turnover we are seeing is the downstream effect of low international oil prices on global chemical prices. In the current climate, we are distributing similar volumes as in previous years but have reduced our invoicing. Local sales for 2015 were \$25 million and sales in 2016 will be approximately \$22 million.

What is the chemical distribution environment like in Argentina and how will this change as a result of the new government?

The number of chemical distributors is too high when compared with the size of the Argentine market. There are roughly 130 companies in operation today; this is mainly due to the fact that there are a large number of small- and medium-sized companies in existence and companies favour maintaining personal relationships.

Operating costs for these types of businesses are fairly substantial, particularly as a result of the changes made by Argentina's new government: opening up the market and eliminating import restrictions. This new economic climate will decrease available margins and only a few companies will survive this situation. I would expect many mergers, acquisitions and consolidations in the coming years.

What changes has the new government brought into effect and how have these impacted on the chemical distribution industry?

The new government eliminated most of the import restrictions, such as DJAIs, import payments, and many export fees. It is also working hard to obtain an agreement with the holders of Argentina's foreign debt to end the country's position as a financial defaulter. This will then make us as a country eligible for lower financial loans for important infrastructure developments our country needs and, more importantly, the government expects Argentina to gain increasing amounts of foreign investment as a result. It is still a work in progress, but we are returning to simpler times in terms of business operations. We are optimistic but it will not be an easy task. We will then

see a more competitive marketplace among chemical distributors, leading high-level margins to normalise.

In 2012, 97% of the products Arubras distributed were not from Argentina. Is this still true today?

Our distribution of locally manufactured products has increased marginally to 10-12% since 2012, due mainly to the fact that there has been no new chemical production in recent years due to the lack of both raw materials and energy supply. Arubras' focus has therefore remained the same: to distribute products that are not manufactured locally but are necessary to the industry.

Does the current infrastructure backlog in Argentina pose a challenge to distributors?

Most of the companies here have not invested in new distribution infrastructure for around a decade. Old warehouses, some of which are far from the ports, have been retained. The only major terminal for bulk imports into Argentina is the Odfjell Terminal. The port of Buenos Aires is similarly challenging, as well as less cost effective for operations. The government lacks money for infrastructure investment and, whilst proposals for the development of ports and terminals have been made by the private sector, none have yet succeeded in securing investment in Argentina.

With our new government and improving investor confidence, we hope to see an improvement on this situation. In a few years' time, I believe one or two multinational chemical distributors will make large investments in the distribution infrastructure in some of our ports, such as Campana. We have already seen similar investments in countries such as Brazil and the United States.

Looking ahead, what can we expect to see for Arubras in future?

Argentina is our focus; the way of doing business in different cultures is a tough barrier to international expansion. We have expertise in our home market, we know our customers and we know the relevant suppliers. With the right conditions and market stability we can easily double or triple our revenues. —

Adrián Gabriel Schwartz

GRUPO SIMPA



Can you provide us with an overview of Grupo Simpa and its operations within the Argentine chemical industry?

Grupo Simpa began in 1978 when my father bought its predecessor, then known as Sociedad Importadora de Materias Primas Americanas. At that time, few petrochemical companies existed in Argentina and the Argentine economy was opening up to imports. Grupo Simpa now has one division that imports and sells machines, motorcycles, and other recreational vehicles; and another division that distributes raw materials for plastic converters.

The plastics division grosses about \$4 billion pesos per year, with the company's overall revenue hitting the \$5 billion pesos mark. Grupo Simpa's revenue has been growing at approximately 25% per year for the last 20 years, placing Grupo Simpa among the 150 highest-earning companies in Argentina.

Could you tell us more about Grupo Simpa's plastics division?

In 1978, the plastics division of Grupo Simpa sold around 1,000 tons per month; in 2015, this had reached about 17,000 tons per month. The company distributes the products of Argentina's main petrochemical companies: polyethylene (PE) from Dow Argentina, homopolymer polypropylene (PP) from Petroquímica Ensenada (Petroken), copolymer PP from Petroquímica Cuyo (Petrocuyo), and polystyrene from Petrobras. In fact, the first product we distributed were from Monsanto's polystyrene plant, which was eventually acquired by Petrobras. We are also the main Argentine distributor for Styrolution, formerly a joint venture between INEOS and BASF and the largest producer of ABS/SAN (Acrylonitrile Butadiene Styrene/Styrene-acrylonitrile resin), which Argentina imports. Grupo Simpa is now the largest petrochemical distributor in Argentina, with a 55% share of the plastics distribution market.

What market conditions in Argentina have allowed Grupo Simpa to control most of the country's petrochemical distribution sales?

Simpa's ability to control most of the petrochemical distribution market in Argentina relates to the country's financial instability. In recent years, Argentine converters have had virtually no access to international capital and local banks are loath to grant loans of adequate sizes and maturity periods. At the same time, Argentine petrochemical producers are unwilling to assume the risk of supplying products on credit. As a result, our financing options have enabled us to become the largest petrochemical distributor in Argentina. For example, while Dow Argentina grant their customers up to seven days to pay after receiving an invoice and our competitors allow between

30 and 60 days, Grupo Simpa allows between 90 and 180 days. This kind of financing has always been important in the Argentine petrochemical industry as, throughout the country's history, banks have come and gone; in recent years for example, international banks have deserted the country. Our consistent financing options have created a relationship of trust between Grupo Simpa and our customers.

Petrochemical producers are especially risk-conscious in Argentina. The world average for distribution sales as a percentage of total plastics sales is about 20%; in Argentina, it is about 40%. Petrochemical producers prefer to sell their products to Grupo Simpa rather than directly to end-users because it is less risky.

In December 2015, the Macri administration lifted currency controls, with the aim of liberalizing Argentina's trade policy. How will these changing macroeconomic variables affect the plastics industry?

The lifting of currency controls initially led to an increase in the peso-dollar exchange rate from \$9.80 pesos per dollar to about \$13, or a devaluation of about 35%. The devaluation of the peso will cause plastics prices to increase 35%, but increased plastics imports will cause prices to decrease by around 15%. As a result, plastics prices should only increase by 20% in 2016.

At the same time, companies have been exiting their positions in pesos by buying inventory in anticipation of the peso's devaluation. In particular, the anticipation of the peso's devaluation has led to companies stockpiling plastics products.

How will more petrochemical imports affect the growth of Grupo Simpa's plastics division?

Since the Argentine government began to restrict imports in 2012, large customers were forced to look to local petrochemical producers to compensate for the supply of products that they would normally obtain from foreign producers. In turn, petrochemical producers have prioritized supplying a set of large customers rather than supplying distributors.

Now Argentina's trade policy will liberalize, these large companies will return to their traditional suppliers, many of which are based in Brazil. As a result, Dow, Petroken, Petrocuyo, and Petrobras will have a surplus of products that they will sell to Grupo Simpa. With an increased stockpile, we will target our platform of petrochemical customers, which is the largest in Argentina. This could increase our petrochemical distribution to 60%. To accompany the expected growth, we will invest \$15 million to build a new 32,000-square-meter warehouse in San Fernando, Buenos Aires Province. —

Martin Font & Miguel De Cecco

MF: General Manager

MDC: Business Manager

MCASSAB ARGENTINA



MF

Why did MCassab decide to enter Argentina in 2007?

In 2007, MCassab's shareholders decided that the company's three business units of the chemical distribution division would do well in Argentina. In 2008, MCassab opened the company's Argentina branch and made its first sale in September 2008 after developing the necessary logistics and support, and after making the necessary government registrations for the food and feed industries.

The company's shareholders determined that Latin America has good business potential and that penetrating the Argentine market as the company's second market in Latin America outside of Brazil made logical sense. Though the Brazilian and Argentine markets are different in scale, they have similar end-markets. Around 2007, the focus of MCassab's distribution business in Brazil was the feed industry, which is also an important industry in Argentina given the importance of its food industry. The strategy for MCassab's chemical distribution division was to recreate the division's Brazilian success in Argentina.

What kind of growth has MCassab's Argentina branch experienced since 2008?

MCassab has grown significantly and swiftly since its first sale in 2008, having now reached millions of dollars in revenue in seven years. This growth has been possible thanks to the company's professional and technical staff, and thanks to the 85-year old relationship that MCassab has with its suppliers. Moreover, MCassab is known for the quality of its service and assistance among suppliers and end-users. MCassab's goal in Argentina is to become one of the top five chemical distributors in Argentina.

How important is the Argentina branch to MCassab's international strategy?

MCassab's Argentina branch is the biggest branch outside of Brazil and is the first one to copy the company's distribution division model in Brazil. The Argentine branch complements the Brazilian branch well as clients that operate in both Brazil and Argentina are happy to have a single company supplying them in both countries with the same degree of product quality and assistance. Some clients are also asking MCassab to expand beyond Brazil and Argentina in Latin America given the increased interest in regional suppliers that began two or three years ago. Multinationals are now looking for distributors that can supply a product with the same quality and assistance throughout the entire region.

Which area contributes most to the Argentine branch's revenue?

In 2014, 50% of the revenue of MCassab's Argentina branch came from life sciences, 30% from animal technology or feed, and 20% from industrial chemicals. Yet MCassab's goal is for each of these three areas to contribute a third of the Argentine branch's revenue. MCassab aims to have a diversified set of revenue sources to manage the risk associated with an eventual downturn in one of the industries that the company serves.

MCassab has seen very fast growth in life sciences, which includes food, pharmaceuticals, and cosmetics. Moreover, the company foresees great opportunities in industrial chemicals and in feed. MCassab foresees growth opportunities in these two industries especially as the new government is likely to implement more business-friendly regulations and as the oil and gas industry continues to develop. With respect to the oil and gas industry, MCassab is confident that it can supply chemicals to oil and gas fields with a more integrated approach. The company anticipates to especially supply chemicals for the production of natural gas.

What challenges does MCassab face in Argentina?

Though the company aims to grow within life sciences, feed, and industrial chemicals, MCassab remains vigilant about how the new government may change economic and commercial policies. Two issues that significantly affect MCassab's business are the dollar exchange rate and imports, and MCassab will pay close attention to how the next government addresses these two issues. These two issues are important to MCassab because they determine whether MCassab's clients will invest and in what.

For example, stronger import restrictions in the last two years have stalled MCassab's growth and have forced the company to put some projects on standby. MCassab cannot import certain products on the scale that it could be importing.

What are MCassab's expectations for the company's Argentina branch?

By 2017, MCassab plans to increase its revenue by 50%. Moreover, within the next three years, MCassab expects to be one of the top five chemical distributors in Argentina, and potentially the region. MCassab is optimistic about the success of the Argentine branch but also of the Argentine economy. With the new presidential administration, MCassab expects to see the implementation of more business-friendly reforms. And if the Argentine economy grows, MCassab will grow with it. —

Alfredo Milito, Luciano Milito & Victor Blanco

AM: President
LM: Commercial Director
VB: General Manager
LOGISTICA MILO



Could you provide us with an overview of Logistica Milo from its foundation in 1905 to the present day?

AM: Logistica Milo began as a pure-play transportation company; in the very beginning we used horses, getting our first trucks in 1936. We moved to our current facilities in 2008 as a result of our increasing work with the chemical industry. The company now has a fleet of around 40 trucks and 70 trailers. Working with a range of petrochemical companies, we offer transportation, specialist warehousing services, isotank rentals, with one of our major services being heating-controlled storage. In terms of new activities for the company, we are in the process of adapting this facility into a fiscal depot, which will improve our abilities to handle international cargo for imports and exports services.

What sets Logistica Milo apart from its competitors and how has innovation enabled you to better serve your customers?

VB: We pride ourselves on working together, side by side, with our customers to solve their needs and come up with a range of specialist solutions that are rare among our competitors. Certain chemicals, such as toluene diisocyanate, for example, require heated storage. To improve this service further, we invested in a boiler with a temperature-controlled program that enables us to heat products within our isotanks without adversely impacting on the structure of the chemicals. Another unique service we offer is the ability to transfer product between different tank sizes at our sites, for example from isotanks to IBC or drums. This allows our customers to distribute their supplies more efficiently throughout the country using our fleet of smaller trucks, rather than one large one.

LM: We are also always looking to provide our customers with added-value solutions and adapt to new market trends. Some of our customers produce a number of waste products, such as crude glycerin, a by-product of the growing biofuels market. We collect this waste product and are looking to export it to China. Our main focus is to work with our customers, identify their needs and supply specialist services when they require them. The petrochemical industry in particular has struggled with transportation over the last ten years and Logistica Milo has grown in the market to mitigate these issues. At present, 90% of our business concerns chemical companies, such as YPF, BASF, Sherwin Williams and Petroquímica Rio Tercero, with the remaining 10% of our business covering activities related to the chemical industry.

How will the chemical environment change as a result of the new government administration?

VB: Under the previous government Logistica Milo had a lot of support, particularly in terms of the awarding of credit lines, which allowed us to upgrade our fleet and facilities. Safety in transport is paramount for us and we need a high quality fleet to provide this. With the new government we are looking forward to a new and bright future as we expect the opening of the market to attract many more petrochemical companies to Argentina, for whom Logistica Milo can provide distribution and logistics services. We also expect exports to increase heavily with the lift of controls in exchange rates brought about by the new government.

With the recent change in government and increasing investment in unconventional hydrocarbons resources, what is the outlook for the Argentine chemical industry in the future?

LM: We see a bright future for Argentina. The country has huge potential, not only in exploring and developing our natural resources, but also the human resources aspect. Argentina therefore needs to focus on increasing infrastructure investments in roads, railways, storage and ports to support this future. Logistica Milo has implemented a yearly investment package to constantly improve our infrastructure, giving us an edge on our competitors while also allowing us to provide excellent service to our customers. With these investments, we will be able to comfortably supply new companies as they increase investment in Argentina.

VB: Argentina is always an opportunity for chemical investments. Low international oil prices have delayed activity in the first half of the year, but I have no doubt that with a more clear knowledge of the situation in the United States and China, the second half of the year will regain momentum. Logistica Milo has invested in its fleet and facilities over the past decade in preparation for this scenario and is now ready to support new products from global chemical companies. —



Andrés Gerschenson

General Manager
MESUCAN

Can you provide some background to Mesucan's history?

Mesucan was founded in the 1960s as a family-owned, general transportation company. The company used to transport general merchandise to and from the Port of Buenos Aires. In 1975, Mesucan gained Dow Argentina as a client, which paved the way for the company to serve the petrochemical industry more broadly. To this day, Dow remains Mesucan's main client. In 1997, the company added storage to its transportation services by acquiring its first warehouse to store goods defined as dangerous by the International Maritime Dangerous Goods code, which include products that are flammable, toxic, corrosive, etc. Throughout the 2000s, Mesucan acquired a

number of warehouses to undertake the logistics of not just storing divided packages, but also moving ISO tanks with spreader beams. The company now also divides and drums chemicals.

In short, Mesucan has truly become an integrated logistics company specialized in chemicals and petrochemicals that provides solutions for transport, warehousing, division, and other services.

In 2014, logistics services related to the storage and transportation of specialty, fine, and commodity chemicals accounted for 70% of Mesucan's revenue. In addition to Dow, other important clients have included Ashland, Solenis, BASF, and Brenntag.

What explains the timing of Mesucan's addition of new logistics services?

Mesucan's clients have always been the company's motor for change. The top-notch companies with which Mesucan works have always pushed the company for more services and more security. The multinationals that operate in Argentina and Latin America often demand standards that are higher than national ones. Especially since 2012, Mesucan has sought to create a mid-term plan for the company, which includes the professionalization of the company's management. Though I am a member of the founding family, Mesucan's management system is now more complex and boasts more professionals.

How would you describe the company's performance since 2010, and what has influenced that performance?

In 2010, Mesucan employed about 20 people and revenue reached about \$20 million pesos; in 2015, the company employed 42 people and revenue reached about \$70 million pesos. Thus, taking into account inflation, the company has about doubled in size from 2010 to 2015. Throughout this period of growth, the Argentine government pursued an economic model based on high consumption and local production. In particular, some of the chemicals that Mesucan handles are commodities used in personal care, cleaning, the automotive industry, construction, and other industries that saw a significant amount of growth in recent years. Though this growth may not be reflected in the sluggishness of recent GDP growth, Mesucan has clearly seen a higher demand for its services.

As an integrated logistics company mostly focused on the chemical industry, Mesucan is subject to the fluctuations of that industry. Is Mesucan's specialization a business risk or a competitive advantage?

Mesucan has taken the conscious decision of becoming a logistics operator specialized in chemicals. Though that focus may come with a risk, it is outweighed by the benefit of being one of Argentina's only integrated logistics companies focused on chemicals. The transportation market is very fragmented in Argentina. Family-owned companies with one to five trucks constitute about 85% of Argentina's transportation and logistics companies. Low barriers to entry are largely what have caused this fragmentation. National Law 24449 regulates road traffic and safety, and a chapter in an annex to that law regulates the transport of dangerous goods. However, the provisions contained in that law are not very demanding.

Mesucan now boasts the expertise, certifications, management system, and infrastructure that allows the company to serve the chemical industry better than most logistics companies.

What are Mesucan's plans for the short-term?

In addition to Mesucan's flagship chemical division, the company added an agrochemical division in 2015. Mesucan anticipates that agrochemicals will be one of the main growth drivers of the Argentine economy, especially as the new government is expected to liberalize its trade policy. In 2015, Mesucan invested \$40 million pesos in a new warehouse to store agrochemicals. The company also obtained certification from the Cámara de Sanidad Agropecuaria y Fertilizantes, or the Argentine industry chamber for agrochemicals. Mesucan also bought a new property of about 30,000 meters in Zárate near the Zárate petrochemical center. Moreover, Mesucan is discussing with clients about opening warehouses near Añelo, Bahía Blanca, and Comodoro Rivadavia. These investments are driven by Mesucan's expectation that two drivers of the Argentine economy will be the energy and agrochemical sectors. —



CONCLUSION: FINAL THOUGHTS, CREDITS AND INDEX



"Investors should recall the first-mover advantage. Those that take the risk in heavily investing in an opportunity before others are those that later reap significant profit. Now is the time to invest in Argentina's petrochemical industry."

- Ignacio Millan,
President,
IPA

“Latin America is a developing region with a large market of more than 680 million people; these economies continue to grow despite their economic and political issues. We believe new investments in the region will take place in countries with abundant, readily available, competitively priced feedstock. An added bonus for Argentina is the new government: the country is slowly developing a political environment conducive to attracting foreign direct investment.”

- Rina Quijada,
Senior Director Latin America Chemicals,
IHS Markit

“We need to look ahead over the next two decades: in around ten years we will see Argentina become self-sufficient in terms of hydrocarbons, which will positively impact the petrochemical industry. We then need to focus on exporting – Argentina currently only exports around 0.8 million tons of product per year - but this does not make economic sense today.”

- Enrique Grotz,
Partner and Oil & Gas Leader,
EY

“We believe the fertilizer industry will experience a great deal of change in the next ten years and we will need to be in close proximity with the farmers to learn about their response to our products. We could see a complete turnaround in the Argentine agricultural model in the next two to three years as we encourage farmers to take care of the soil and adopt environmentally friendly measures.”

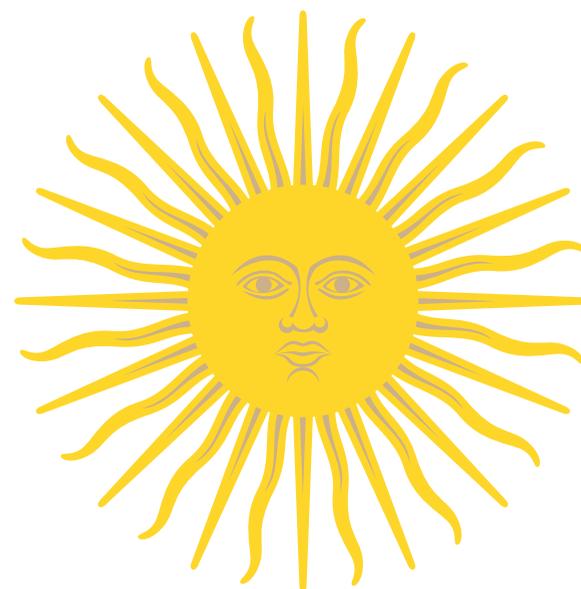
- Jorge Bassi,
President,
Fertilizar

“Many products will be going off patent in 2017, which will lead to a natural increase in the size of the market. There are also no blockbuster products in the pipelines of the big R&D companies. The key issue is market access and only those companies with access to consumers will survive, so we are likely to see more consolidation within the industry.”

- Fernando Lespiau,
Commercial Director,
UPL Argentina

“The challenge with developing unconventional resources is finding ways of making production more economic. You cannot achieve this with a single technology; rather you need to find the right combination. YPF wants to be a company that leads the development of the country’s capabilities by developing the technologies locally rather than importing them, which would in turn reduce costs.”

- Santiago Sacerdote,
General Manager,
YPF Tecnología S.A. (Y-TEC)



“The impact of the shale boom in the United States had a profound impact on its petrochemical industry, but imagine the impact that such a boom would have in Argentina, where the ratio of resources to economic output and population is much larger. Even if Argentina underachieves, the impact could still be massive.”

- Gastón Remy,
President,
Dow Argentina

“With today’s abundance of crude oils and particularly with shale oils, if a plant can process effectively without having slowdowns or accelerated degradation of assets, we can see a significant impact on the bottom line. This applies to products as well; if a company is flexible enough to produce a variety of products that can serve different markets, their facility is a real asset.”

- Marcelo Carugo,
Director Global Refining,
Emerson Process Management

“A particular area of interest for the future will be oleochemicals. Companies in palm-oil rich countries, such as Malaysia, are buying companies in Europe. The main oleochemical we have in Argentina is biodiesel, but I believe we could develop some other interesting businesses from oleochemicals, such as propylene glycol.”

- Diego Garcia Touza,
Director,
Reagens Varteco

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EDITORIAL AND MANAGEMENT TEAM

Senior Project Director: Alice Pascoletti (apascoletti@gbreports.com)

Project Director: Laura Brangwin (lbrangwin@gbreports.com)

Industry Analyst: Harriet Bailey

Project Coordinator: Katherina Prügel

Researcher: Francis Lister

Executive Editor: Mungo Smith (mungo@gbreports.com)

General Manager: Katya Koryakovtseva (katya@gbreports.com)

Graphic Designer: Designa (gdc@gopadesign.com)

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