

## The Brazilian Chemical Industry – Challenges and Opportunities

Chemistry is a key sector in any economy, with a strong presence in practically all productive chains. It is no coincidence that the major world economies are also the leaders in the manufacturing of chemicals. Many countries have developed, created several employment opportunities, added value to their industries out of investments that started with the expansion in the production of chemicals.

The net income of the Brazilian chemical industry reached US\$ 130 billions in 2010. Brazil ranks eighth in the world ranking of manufacturers of chemicals, at the top of which is the United States, followed by China, Japan, Germany, France, Italy and South Korea.

The anticipated growth for the Brazilian economy of at least 4% a year between 2010 and 2020 would imply a demand for chemicals in 2010 of about US\$ 260 billions, 80% superior to that of 2008.

Despite the favorable growth expectations, there is a strong concern about the current situation of the sector trade balance. The Brazilian trade deficit concerning chemicals has jumped from US\$ 1.2 billion in 1990 to US\$ 20.7 billions in 2010. Concerned about the deficit worsening and the lack of prospects for new investments, the Brazilian Chemical Industry Association (ABIQUIM) has launched the *National Pact for the Chemical Industry*,<sup>1</sup> with the objective of analyzing the situation of the chemical industry and projecting the future demand for the next ten years.

According to the *Pact*, Brazil holds opportunities that may require investments for the chemical industry of about US\$ 167 billions along the next ten years. Such opportunities have been listed in four large segments:

- 1<sup>st</sup>) *Economic growth*: just to keep up with the country's natural growth, the investment potential amounts to US\$ 87 billions, to be dedicated to new chemical plants, as well as to the expansion and maintainance of the ones already in operation.
- 2<sup>nd</sup>) *Reduction of the trade deficit*: in order to replace imports and increase exports, aiming at reversing the increasing tendency of the trade deficit in chemicals, investments of US\$ 45 billions are projected.
- 3<sup>rd</sup>) *Renewable chemistry*: due to the Brazilian biodiversity as well as its favorable climate and soil, Brazil is

expected to become the worldwide leader of this market. Studies indicate that, in 2020, chemicals obtained from renewable raw-materials will answer for about 10% of the global supply of chemical products. For Brazil to attain that leadership, the estimated investments reach US\$ 20 billions.

- 4<sup>th</sup>) *Pre-salt*: the value aggregation to the raw-materials originated from the pre-salt oil and gas will require investments of US\$ 15 billions to be used for the construction of petrochemical centrals and second-generation units.

The production rise resulting from these four segments will demand a strong agenda for innovation. The projected investments in research, development and innovation are expected to reach US\$ 32 billions up to 2010 or the equivalent to 1.5% of the annual net income of the sector expected for the period. Currently, the sector invests 0.8% of its annual turnover in R&D.

The study emphasizes that such opportunities will only result in effective investments in case some stumbling blocks to the expansion of the production capacity and the establishment of new plants are removed. The decisive Government support will be fundamental to solve the following problems:

- a) *Basic raw-materials* at competitive prices and guaranteed in relation to volume in the long term and formally contracted. The present chemical product trade deficit could be significantly reduced with the local production of products having natural gas as raw-material. The gas law, published in March, 2009, says it is up to the National Council for Energy Policy (CNPE) “to establish the guidelines for the use of the natural gas as raw-material in industrial productive processes by the settlement of conditions and specific criteria aiming at the use both efficient and compatible with the local and external markets”. Thus, the legal framework for the Government to adopt a policy that encourages important investments in the sector has already been created.
- b) Solution for the *tax system distortions*, by relieving the tax burden upon the productive chain, applying

the tax equality principle to similar products and by protecting against unfair competition. It is necessary to find mechanisms to halt the granting of tax advantages to imports rather than to the product manufactured in Brazil.

- c) Investments in the *improvement of the logistics infrastructure* need to be accelerated, providing ports, roads and other modal solutions to enhance the system efficiency and the competitiveness of Brazilian products. Besides beneficial for the sector itself, investments in infrastructure would also bring indirect benefits due to the fact that a wide range of chemical products is used by the construction sector and for the basic sanitation.
- d) The chemical industry also requires greater Government support to the technological development and to innovation. In the chemical sector, some investments require an intermediate level before the final decision to build a plant is made – a pilot-unit to test processes and products. Governmental support to such projects – the so-called pre-competitive investments – by means of adequate financing mechanisms is fundamental to reduce the investor's risk and to foster innovation.
- e) Credit access should be facilitated, mainly for small and medium-size enterprises, in order to strengthen the productive chain.

The implementation of these anticipated investments will bring significant benefits to Brazil, among of which the creation of over two million jobs, greater attractiveness for direct foreign investments, the increase in the importance of Brazil in the international scenario, the stimulus to the development of the capital goods sector, the strengthening of the capital market and the external vulnerability reduction stand out. In addition, there will be the expansion of the biomass use potential and the stimulus to the development of new technologies.

The international scenario and its main movements are also to be considered. How to attract world-scale plants to Brazil when the investment decision is global and companies can opt for countries in which raw-materials are abundant or have lower costs? How to compete with China and India, with their surplus currently invading the Brazilian market? How to deal with the competitiveness gains in the US market with the *shale gas*<sup>2</sup> advent?

There seems to be a national consensus that Brazil cannot do without strong industry, mainly in the strategic sectors of its economy. However, the question to be posed is: how can it supply the future demand foreseen for chemicals? Will it increase its local production, bringing the benefits mentioned in the Pact to society or will it simply opt for the increase in the imports share, contributing negatively to the results of its trade balance? Such definition, besides being important, demands urgency, because some projects, after their definition, may require five years for their entire maturation. Brazil cannot run the risk of, in the medium term, losing its choice option because of a too-delayed decision.

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## References

1. ABIQUIM, Brazilian Chemical Industry Association, *National Pact for the Chemical Industry*, Sao Paulo, Brazil, June 2010. Available at: [http://www.abiquim.org.br/pacto/Pacto\\_Nacional\\_Ingles.pdf](http://www.abiquim.org.br/pacto/Pacto_Nacional_Ingles.pdf)
2. Shale gas - unconventional natural gas accumulated in the pore spaces of reservoir rocks of sandstone or carbonate. In Costamilan, L., *The Impact of Shale Gas in the Global Market for Natural Gas*, ENAIQ 2010, 15th Brazilian Chemical Industry Meeting, ABIQUIM, Sao Paulo, Brazil, December 10, 2010.