

Insights of a new model for the C₁ Chemistry considering the recent pre-salt reserves

Aims

This study aims to identify and examine the possibilities of developing a chemical industry in Brazil, based on natural gas as raw material: the Chemical Industry of C₁.

For this analysis, it is fundamental understanding how the world's energy market is structured according to the availability or deficiency of energy sources, in a context where the participation of natural gas in the Brazilian energy matrix has growing significantly. The consumption of natural gas as raw material is not receiving equivalent benefits in the current development policy which priorities its use as energy source.

Considering the increasing discoveries of gas reserves in Brazil, this paper pretends to answer if, at this time, when it is possible to forecast even exportable volumes of natural gas, it is not the time to implement a specific policy focused on the development of a chemical industry based on natural gas.

This discussion will do consider some issues, such as: Can the raw material gas price be the same as energetic consumption? How world producers of natural gas are developing their C₁ Chemical Industry?

Considering these circumstances, of an apparent conflict between gas as raw material faced gas as fuel, how could producers / distributors optimize their business and, at the same time, contribute for the improvement of the Chemical Industry, which is a strategic sector.

Contents

In order to identify and understand the Brazilian scenario, the work will be guided by the following main themes:

1. Economics of Natural Gas business: Energetic Use / Non Energetic Use (Raw Material)
2. Brazilian Natural Gas market: Supply Demand Balance, current and future
3. Prices mechanisms
4. World models and the Brazilian position
5. Final Considerations

1. Economics of Natural Gas business: Energetic Use / Non Energetic Use (Raw Material)

The purpose of this chapter is to deal in a conceptual way the economics of natural gas as fuel face to its use as raw material.

The uses of natural gas as raw material in Brazil didn't have, until now, a specific Legal Regulatory Mark. At the beginning of the consumption of larger volumes of gas in Brazil, the Brazilian Government policy focused mainly on the development of its use in the fuel market: automotive natural gas for private vehicles (not in public transport) and thermoelectric power generation.

The chemical industry based on natural gas has never been favored with a specific policy, considering its own business cycle.

In this environment, the Chemical Industry, especially the C₁ Chemistry, had impacts on its consolidation, resulting in a high degree of vulnerability for some production chains, with direct reflects on the trade balance of the chemical sector.

2. Brazilian Natural Gas market: Supply Demand Balance, current and future

This chapter will analyze the natural gas supply and demand historic series, and the great expectation of increased availability of natural gas in Brazil. The known prospectus refer to large volumes of gas along the Brazilian coast due the abundant reserves of gas in ultra deep water, the layer called "pre-salt".

Brazil will be faced to new challenges, considering the strong change of status. With a profile extremely dependent of gas imports (Bolivia), Brazil will become an exportable country. Additionally, we have to consider the possibility of developing the technology for offshore liquefaction.

In this topic, it will be evaluated key aspects such as:

- The structure of the utilization of these new quantities of gas available in the medium term
- Technical, logistical, strategic, political and economic issues
- Possible policies to use these volumes
- Possible models for the development and strengthening of a natural gas based chemical industry.

3. Prices Mechanisms

Then, it will be treated the issue of pricing policy that exists in Brazil today. In this analysis, it will be considered the current monopoly environment, which sets the price and commercial policy in Brazil a natural gas market.

It will be examined the driver forces which give sustainability to this pricing policy, focusing mainly on energy use and its impacts in the chemical industry.

4. World models and the Brazilian position

As a consequence of the above items analysis: the “economics” of natural gas business; present and forecasts of the energy market in Brazil; and pricing mechanisms, it will be presented some examples of world markets that had developed successfully their chemical industry based on gas.

It will be reviewed models used by governments and industries which are based on plentiful gas supply market and which believe and bet in its development.

Based on well or not well succeed experiences, we'll try to identify synergies, considering the particular characteristics of the Brazilian market, which will combine the increasing and abundant availability (with new reserves) for a well-developed final consumption market.

This analysis will be performed from the use of comparative matrix methodology with the identified business models.

5. Final Considerations

As a result, it will be presented a set of conditions for the construction of a development model for the chemical industry based on gas, which is in line with the reality of the Brazilian market and focused on the typical added value features of the chemical sector, a factor of economic and social development.

The final considerations will be aligned with the following principles:

- Valorization of the use of recent discovered of gas resources (the pre-salt layer);
- The insertion of the Brazilian Chemical Industry in a global context, world scale and with very good growth expectation;
- The current financial crisis, even considering the lack of expensive credit, is a source of opportunities for the consolidation of assets and creation of alternative production routes.