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YEAR 1 • 001 • OCTOBER 2017

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ARTICLE

NEW HORIZONS FOR THE OIL MARKET

The world is changing at an impressive rate. Brazil, in particular, is developing initiatives and actions in order to improve the business environment.

We have advanced in the economic field with the approval of a cap on government spending and a labor law reform. But more is required to improve the country's competitiveness, approving the social security and tax reforms as well. With this, we can sustainably resume economic growth and provide conditions for greater development of our industry.

In the oil and gas market the outlook is positive. The barrel price displays an increasingly healthy and promising recovery.

News from the fiscal front, with the desired extension of Repetro – special customs regime and the perspective of the issue of a Provisional Measure, will allow an extension of benefits for suppliers. The expected bidding rounds, which are due this year, are bound to produce successful results.

But, as in Brazil, additional measures of great importance are necessary.

One of them is the regulation of the waiver for local content. This requires full attention not to prevent

the participation of national industry while not braking the country's development.

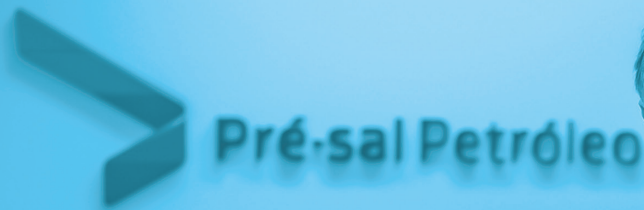
The oil market represents over 30% of Rio de Janeiro state's GDP. Therefore, it is only natural that the state of Rio take the lead in resuming this segment's growth.

We live a moment of resumption, of rebuilding. And also of developing new business models and partnerships, of using our productive creativity at its maximum. All for the recovery of an industry which has its heart in Rio.

We must transform into reality what is still potential – one of the highest, when referring to pre-salt. We must take advantage of Rio's industrial history, its diversity and complexity, to develop fruitful partnerships and participate in the distinct existing production environments – onshore, shallow, deep and ultra-deep waters.

We have the technical competence and installed capacity which deserve to be taken advantage of. Continuing to advance on the development of a business environment is our motivator. It is under such an assumption that the Sistema FIRJAN will continue to act, together with all market agents, contributing to overcome challenges and reaching the desired recovery of the oil market.

Eduardo Eugenio Gouvêa Vieira
President of Sistema FIRJAN



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INTERVIEW

BRAZIL PRE-SALT PERSPECTIVES

Pre-salt, one of the most important discoveries in the Brazilian oil and gas market, remains attractive. The importance of this polygon area was analyzed by the president of Pré-sal Petróleo S.A. (PPSA), **Ibsen Flores Lima**. To him, the scenario is positive for continued investments.

What is the importance of pre-salt for Brazilian production?

The pre-salt polygon is among the most important oil and natural gas discoveries in recent years. With it, we significantly increase production in Brazil, envisioning the possibility of resuming the Brazilian economy's growth. It is responsible today for 48.2% of production in the country. In the Santos Basin the volume produced per well of around 21,000 barrels per day, is far above the industry average. Nine out of ten wells with largest production in the country are located in that area. To get an idea of its potential, the daily production in pre-salt grew from 41,000 bpd in 2010 to 1.29 million bpd in July 2017, according to ANP. Furthermore, it presents a natural competitive advantage due to the high productivity of its wells, as a result of the high quality of its carbonate reservoirs, extensive and bulky productive zones with low exploratory risk. This results in lower investment per unit of recovered volume.

What is the role of PPSA in the management of sharing agreements?

PPSA is responsible for the management of sharing agreements. Our knowledge and management capacity is what will guarantee best results to the Nation regarding

pre-salt exploration and production. The company presides the Operational Committee, aside from monitoring and auditing the execution, operational expenses and capital expenditures of the exploration, evaluation, production development and actual production. Expenses for recovery cost in oil must be approved by the company, which also carries out technical and economic analysis of plans and programs to be executed by the consortium. It must be emphasized that we act in constant collaboration to take the best decisions, considering that one of our greatest legal obligations is the maximization of the project's economic results. This is also the final objective of all members of the consortium. In other words, we all move in the same direction.

What are the expected timelines and demands for the industrial sector?

The scenario is very positive and there are good perspectives regarding Brazilian pre-salt. We have made important advances on the regulatory agenda and we have a bidding calendar through 2019, with another nine rounds to come, which shall invigorate the market. All of this in an environment of respect to contracts and an attractive fiscal regime.



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MARKET

DIVERSIFICATION TO BOOST NATURAL GAS IN BRAZIL

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New government initiatives and opening of the market to private investors shall generate more dynamism in the natural gas market in Brazil. A change which shall move the segment is the approval of a new legal framework, stemming from suggestions received in the scope of the Gas To Grow program, of the Ministry of Mines and Energy (MME). Proposals being analyzed in the National Congress include the bill 6407/13, written by federal congressman Antonio Carlos Mendes Thame (PV-SP), which aims to increase competition in this industry.

According to Giovani Vitória Machado, Brazilian Energy Research Company (EPE) - superintendent for Natural Gas and Biofuels, the creation of an integrated transport system is one of the most significant changes in the new regulatory framework. "The new law will create integrated transport, in an entry and exit model, which greatly reduces cost and increases efficiency for gas transactions," he said.

Machado emphasizes that there are concrete ongoing changes, such as the privatization of gas distributors in states, which can lead to a multiplication of players. The EPE superintendent highlights that, along with the increased number of investors, there shall also be a greater supply of natural gas over the next ten years. With a supply of 43 million cubic meters per day in

2017, the integrated network shall expand capacity to approximately 59 million cubic meters per day in 2026. "We estimated a growth in national supply, but with a decrease in gas imports from Bolivia", he explained.

To Fátima Ferreira, Brazilian Chemical Industry Association (Abiquim) director of Economics and Statistics, the perspectives for the segment are positive, but it is important that the regulatory framework under construction contemplates market rules so that a fall in gas prices may occur. She points out that for the chemical industry, which uses gas as a raw material, there are processes in which gas corresponds to 80% of production costs. "There have always been transport, production and distribution monopolies. But it is important for us to exit this scenario because in a monopoly there are no competitive prices. Our expectation is to have a market for the commercialization of gas," she declared.

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IT IS IMPORTANT THAT THE
REGULATORY FRAMEWORK UNDER
CONSTRUCTION CONTEMPLATES
**MARKET RULES SO THAT A FALL IN
GAS PRICES MAY OCCUR**

Fátima warns that competition in gas prices is crucial to stimulate the national chemical industry. "Demand for chemical products increased. But all growth brought on by this demand is being supplied by imports. When compared to the international market, gas reaches Brazilian factories at a cost of US\$ 12, whereas in the USA the price to industry averages US\$ 3 to US\$ 4", she illustrated.

NATURAL GAS WORKING COMMITTEE

The use of natural gas as a raw material is one of the themes discussed in the Natural Gas Working Committee of FIRJAN Oil and Gas Business Council. The goal is to create an action plan for the segment based on suggestions presented by business representatives. Luiz César Caetano, president of the FIRJAN/CIRJ Regional Representation in Eastern Rio, defends that FIRJAN's initiative presents an important contribution to strengthen the market both on the state and nationwide basis.

"It is an action which places FIRJAN as the main actor and important advocate defending the interests of industrial consumers of natural gas," stated the entrepreneur, who is also the president of Rio de Janeiro Salt Refinery and Grinding Employer Association (Sindisal).

Caetano also considers the break in the monopoly as a hurdle to be overcome for the development of the segment. "This will allow new players in the creation of a dynamic, competitive, liquid and sustainable natural gas market."

Renata Cavalcanti, FIRJAN Oil and Gas Business Council specialist, explains that the working committee focuses on the Gas To Grow agenda, which shall ease the entry of new players, according to the productive sector's request. "With this opening, we will finally reach a price formed by supply and demand. It is currently based on cost," she said.

+ BUSINESS

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COVER

PATHS FOR A NEW OIL AND GAS MARKET

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As an instrument used by governments to boost strategic sectors of the economy, industrialization is a key factor to leverage competition and global insertion of the Brazilian oil and gas market. Facing a new context of greater openness to private investors and the return of the bidding calendar, the segment enjoys a good outlook for its recovery.

According to Márcio Félix, Ministry of Mines and Energy (MME) secretary of Oil, Natural Gas and Renewable Fuels, the country is inaugurating a new phase for the oil industry, which is viewed as an important source for innovation in other sectors.

“Oil companies and the suppliers installed in Brazil must have a permanent articulation forum in order to face common challenges. With this, new programs will arise for the development of suppliers. Strategic long term alliances must be established, aiming to meet growing and vigorous demands for goods and services in an orderly and sustainable manner,” he argues.

One of the initiatives developed to strengthen the industrialization is the Program of Incentive to the Productive Chain Competitiveness, to the Development and to the Improvement of the Oil and Gas Sector Suppliers (Pedefor), composed of different government



AÇU PORT



NEW LOCAL CONTENT RULES

SIMPLIFIED METHODOLOGY

*AND REDUCTION OF REQUIREMENTS
FOR CONTRACTING NATIONAL
GOODS AND SERVICES*

entities, which was coordinated by the Ministry of Industry, Commerce and Services (MDIC), and is now under the Ministry of Mines and Energy (MME), according to the rotation foreseen in the Program. Within the Pedefor's context, created through a decree in 2016, new requirements were discussed regarding local content valid for the 14th bidding round and the 3rd pre-salt round. Rules were simplified, with the reduction of demands for hiring national goods and services.

Telmo Ghiorzi, sales director at Aker Solutions, evaluates that the decree which created Pedefor initiated a change

process which can strengthen national suppliers while stimulating their competitiveness, as one of the most important boosts to raise exports.

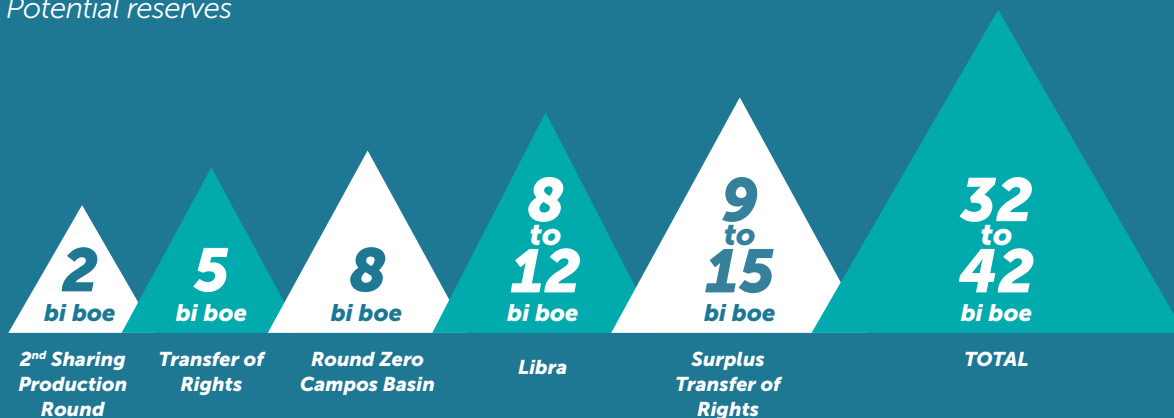
"The program mentions strengthening engineering and stimulating exports, which are crucial elements to the chain. When we face sales abroad, there is a selective pressure in the international market which will force the Brazilian market to qualify itself to compete and develop new competences," he mentioned.

Ghiorzi addresses that the first challenge to the reconstruction of the country's industrial policy is the reach of a consensus among players regarding their concept. "Once we meet such a consensus, it will become easier and quicker to put into practice the changes in industrial policy instruments which will transform our market. We must ask ourselves what we want this industrialization to be," he said.

To Claudio Makarovsky, Oil and Gas director at Siemens, another necessary advance is a change in the country's tax structure and greater agility in licensing agencies in

MAPPED OPPORTUNITIES NEXT ROUNDS

Potential reserves



Source: Sistema FIRJAN survey with ANP data

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order to promote investments. "We need a tax reform and the optimization of environmental agencies to act with due speed in licensing. But of course we must first free investments, which are being worked based on a regular bidding calendar," he affirmed.

Raul Sanson, vice-president of the Sistema FIRJAN, notes that Pedefor must contemplate private investors in its discussions, as a way of guaranteeing greater plurality and a market vision in the segment's policy debates. "Our chain is divided in three links: investor, represented by the big oil companies who invest in the bidding rounds and buy fields' right to explore; EPC firms, which produce oil rigs; and the manufacturers of goods and equipment. Industrial policy is made for the chain, so representativity and voice should be given to it in the context of the Program", he declared.

Sanson warns that industrialization must be constructed by means of long term strategic planning, coordinated by a diversified group that identifies deficiencies which prevent national companies from becoming more competitive and presenting international prices. "At

the end of the day, what you want is a national industry with prices at global levels. Stimulating the chain so that it creates wings to eventually achieve greater independence and even export," he explained.

Eduardo Eugenio Gouvêa Vieira, president of FIRJAN, points out that, like the extension of Repetro – a special customs regime for export and import of goods for the oil and gas sector, with the possibility of amplifying benefits to suppliers –, one of the most awaited changes was the regulation of the local content waiver. "It is a measure which deserves full attention not to prevent the participation of national industry while not braking the country's development. We are at a moment of converging initiatives and actions in favor of unlocking investments in the oil and gas market," he affirmed.

Magda Chambriard, Brazilian National Agency of Petroleum, Natural Gas and Biofuels (ANP) former general director, argues that adjustments in the local content policy are part of the process of national oil and gas industry reconstruction. According to her, factors such as the fall in the barrel's international price and

the economic crisis faced in the country generated a distortion which affected the original concept of local content.

"There is nothing wrong with that. All policies are adjusted with time. Today we ask if in fact we do have a policy. There are crucially important questions. Aside from productive capacity, aptitude and necessity to form a cluster, access to financing is also needed. Production in Brazil is too expensive nowadays, due to the Brazil Cost," she evaluated.

Magda also emphasizes the construction of an export industry as the major challenge to develop the Brazilian chain. "There is no good which deserves to survive if it cannot compete globally. And exports are part of this framework of acknowledging competition as a fundamental issue to the oil segment. We must now put that in practice," she completed.

OIL AND GAS BUSINESS COUNCIL

The strengthening of the oil industry is one of the pleas in the Development Map for Rio de Janeiro State 2016-2025, produced by Sistema FIRJAN with the participation of over 1,000 businessmen and focused on transforming the state of Rio into Brazil's best business environment. Among recent changes in the market that respond to actions contemplated in the document are the definition of a regular calendar of bidding rounds and the extension and amplification of Repetro.

Instituted in 2015, FIRJAN Oil and Gas Business Council has strengthened its action with its division in group committees as of 2017. The proposal is to, through periodic meetings, work on bottlenecks and market priorities. The starting point is promoting discussions among market agents to prepare action plans that will help overcome challenges and barriers identified in each subject. There are five committees, divided in Market and Regulation; Research, Development and Innovation (R,D &I); Natural Gas; Mature Fields; and Downstream.

"This FIRJAN initiative is essential. As a representative of industries located in the region which possesses the

biggest production, it is its role to incentivate market discussions. Over the next years, the petroleum industry will invest amounts significantly greater than all other industries. Therefore, the Market and Regulation Committee focuses on the role of this segment and its entire chain, and how it is inserted in the state of Rio," said Magda.

Issues covered by the Market and Regulation Committee include themes such as local content, Pedefor, national engineering, financing, Repetro and the improvement of environmental licensing. According to Telmo Ghiorzi, one of the priority subjects in the meetings is the conceptual standardization of an industrial policy, its reach, its instruments and its practical installation.

"FIRJAN, along with other equally relevant institutions, can contribute with this initiative to transform market dynamics, bringing fundamental contributions to the better understanding of the context experienced by the industry while formulating recommendations for its strengthening," he completed.

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FIRJAN PETROLEUM AGENDA

***Challenges and Opportunities
for the Oil and Gas Market –
Operator's View***
October: PPSA

***Natural Gas Perspectives in Rio
de Janeiro 2017***
December

***Maritime Industry Panorama in
Rio de Janeiro 2017***
December

To learn more: www.firjan.com.br/oilandgas



INNOVATION

INDUSTRY ACCESS TO R,D & I RESOURCES

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The incentive for Research, Development and Innovation (R,D & I) is key to creating mechanisms to increase productivity, new products and services.

One of the main incentive sources is the use of resources linked to the R,D & I clause in the oil exploration and production contracts.

The Brazilian National Agency of Petroleum, Natural Gas and Biofuels (ANP) is engaged in the improvement of the regulation regarding the destination of R,D & I resources as part of its regulatory agenda. According to Boris Asrilhant, the Agency's Research and Technological Development superintendent, "it is fundamental to promote greater cooperation and integration among oil companies, accredited institutions and suppliers using resources from the R,D & I clause as an opportunity to promote development and technological innovation. Furthermore, we are seeking ways to optimize internal processes involved with the R,D & I clause," he stated.

SBM Offshore, with 60 years' experience in solutions for vessels, concentrates its largest fleet operations in Brazil. "The main demand is for cost-reducing technologies such as transport alternatives and monetization of associated gas, considering the

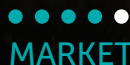
limited discharge routes," mentioned Rafael Torres, SBM's Business Development manager.

Sistema FIRJAN assembled an R,D & I Working Committee linked to the FIRJAN Oil and Gas Business Council to help improve access to resources. Among its objectives are the technological development and the increased participation of local industry in research projects applied to challenges in the oil market.

"Brazil is a benchmark in ultra-deep waters. The technological development we can reach here is enormous. We have the market and resources to advance. The integration of projects and agents will enable us to advance faster," said Karine Fragozo, Sistema FIRJAN Oil, Gas and Maritime manager.

Beyond the resources from the R,D & I clause, there are other incentive resources for oil and gas companies. In the state of Rio de Janeiro, one possibility is the Foundation for Research Support of the State of Rio de Janeiro (Faperj).

"The stimulus to technological development could be far greater if regulations were reviewed based on an effective engagement between regulatory agencies and representative associations such as FIRJAN", according to Paulo Buarque, Faperj president's advisor.



DOWNSTREAM: POTENTIAL FOR GROWTH

The downstream segment – refinery, transport and commercialization of oil, gas and its products – is in a paradoxical situation. While Brazil is an exporter of increasing quantities of crude oil, it is an importer of large amounts of its products. Furthermore, although a strong expansion of domestic natural gas supply is expected, petrochemical production remains stagnant.

According to the Brazilian National Agency of Petroleum, Natural Gas and Biofuels (ANP), in 2016 the consumption of derivatives totaled 135.4 million cubic meters, equivalent to 2.3 million barrels per day (bpd). Meanwhile, the country's dependence on imports reached 442 thousand bpd. In a study carried out by the Agency, assuming a growth of demand for fuels varying between 1% and 4% per year, the dependency on foreign imports will double in 15 years depending on the combination of growth factors for each product.

"Although Brazil is one of the world's greatest fuel consumers, ranking third in the transport segment, national production has not been sufficient to cover demand," said Aurélio Amaral, ANP director.

An initiative to potentially revert the situation is the conclusion of construction of the Rio de Janeiro Petrochemical Complex (Comperj), in Itaboraí. According to Adilson de Oliveira, professor at the Federal University of Rio de Janeiro (UFRJ), it is not

feasible for oil and gas extracted from Rio de Janeiro's continental shelf be refined outside the state.

"Carrying out such activities in Rio state is essential to its fiscal recovery and reduction of unemployment. Oil must not be seen as merely a source of royalties, but as a source of industrial development. Furthermore, Rio's universities and industries must continue to carry out central roles in this segment with the resumption of Comperj," he pointed out.

In July this year, Petrobras and CNPC, China's largest integrated oil and gas company, formed a strategic alliance. CNPC is interested in investing and increasing its activities in Brazil. From this partnership the companies agreed to evaluate opportunities in Brazil and abroad in key areas, one of them being the conclusion of Comperj. The forecast is to finish construction by 2025. Since 2013 both companies have been partners in Libra field, in the pre-salt area of the Santos Basin.

The theme is one of the main subjects debated in the Downstream Working Committee linked to FIRJAN Oil and Gas Business Council. To Armando Guedes, the Council's president, the Comperj resumption is currently the market's main opportunity, alongside the bidding rounds. "It is evident that all states are interested in a unit of this magnitude. Thus, the importance of thinking alternatives to make Comperj a reality."



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BUSINESS

MATURE FIELDS CAN ENERGISE THE MARKET

The Brazilian oil and gas market can count on a regular calendar for bidding of onshore and offshore exploratory blocks. Oswaldo Pedrosa, FIRJAN Oil and Gas Business Council specialist, evaluates that there will be new investments in large, medium and small independent operators. To him, mature fields are a great opportunity to invigorate the market.

“In general, small, mature fields are not attractive to large companies, but small companies can extend the useful life of such fields, mainly because they operate with lower cost structures,” mentioned Pedrosa. Opportunities in this segment, according to the specialist, are concentrated in Petrobras’ divestment plan and in the concession of seven sets of fields in shallow waters extending from the coast of São Paulo to Ceará.

Since mature fields require smaller investments, local materials and equipments are favored, according to Claudio Tangari, president of the Nova Friburgo Metallurgical, Mechanical and Electrical Materials Industries Employer Association (Sindimetal). “Rio de Janeiro’s state industry has always led the development of goods and services for oil exploration, production and distribution. Such opportunities can generate jobs in our state,”

affirmed Tangari, who is also vice-president of the Federation.

To Adolpho Souza, Business Development manager at Schlumberger, the success of the bidding rounds, Petrobras’ divestments and the unlocking of development projects are important pillars to reanimate the market. “Brazil still has great onshore production potential through the application of new technologies.”

Sotreq Group made investments such as the installation of a unit for equipment construction and assembly in the state of Rio, with the objective of developing integrated solutions for its clients.

“We have a great opportunity on the coast with the pre-salt, as well as potential investments arising from the increased production in mature fields in Campos Basin post-salt areas,” stated Diego Reis, the company’s Oil and Gas commercial manager.

To promote the participation of Rio companies in this new cycle, FIRJAN created a Mature Fields Working Committee linked to FIRJAN Oil and Gas Business Council, which debates subjects such as environmental licensing procedures, financial guarantee alternatives, partnership incentives and decommissioning, among others.

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STAFF

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