



OIL & NATURAL GAS CONFERENCE
ARPEL 2013
Latin America and the Caribbean

April 9-11 | Punta del Este, Uruguay

REPORT

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Regional Conference
ARPEL 2013**

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OIL & NATURAL GAS CONFERENCE
ARPEL 2013
Latin America and the Caribbean

OIL AND GAS REGIONAL CONFERENCE ARPEL 2013

From April 9 to April 11, 2013, the city of Punta del Este in Uruguay hosted the third edition of the Oil and Gas Conference ARPEL 2013 for Latin America and the Caribbean. The event is organized every two years by the Regional Association of Oil, Gas and Biofuels Sector Companies in Latin America and the Caribbean (ARPEL).

Under the motto “Ideas - Solutions - Actions: Sustainable transformation through responsible leadership”, this edition of the Conference sought to analyze the scenario in which the industry operates and deepen into the challenges and opportunities faced to

meet the energy needs of the region, among other issues.

A significant number of senior executives of regional and international oil companies and their value chain, as well as government officials of the region, officials from financial institutions and the civil society attended the event. Besides, there were more than one hundred speakers recognized at the regional and international levels.

The attendees had the opportunity to participate actively through Interactive Surveys, Group Workshops and Simultaneous Strategic Sessions, as well as to deepen networking with

meetings in the agenda and beyond it. The first day was focused on the 2013 LATINVE&P Business Forum, where opportunities for investment in exploration and production were presented by the Hydrocarbons Agencies of the region. The following two days covered strategic and management topics related to several areas of the sector, such as energy security, geopolitics and global economy, regional cooperation and key upstream, downstream and sustainability issues.

This report presents the main reflections on key issues developed at the Conference.



DURING PLENARY SESSION I: “LATIN AMERICA UNCONVENTIONALS – PRESENT AND FUTURE”.

Standing: Jeff Meisenhelder, Vice President of Schlumberger’s Unconventional Resources Group. Seated from left to right: Paulo Cesar Aquino, Executive Manager for Latin America of the International Area of Petrobras, Oscar Villadiego, President of the Board of Directors of ARPEL, and Carlos Portela, Vice President of Operations of Pluspetrol.



OPENING CEREMONY OF THE CONFERENCE.

Standing, Roberto Kreimerman, Minister of Industry, Energy and Mining of Uruguay. Seated from left to right: Raul Sendic, President of ANCAP and Oscar Villadiego, President of the Board of Directors of ARPEL.



DURING THE CLOSING SPEECH.

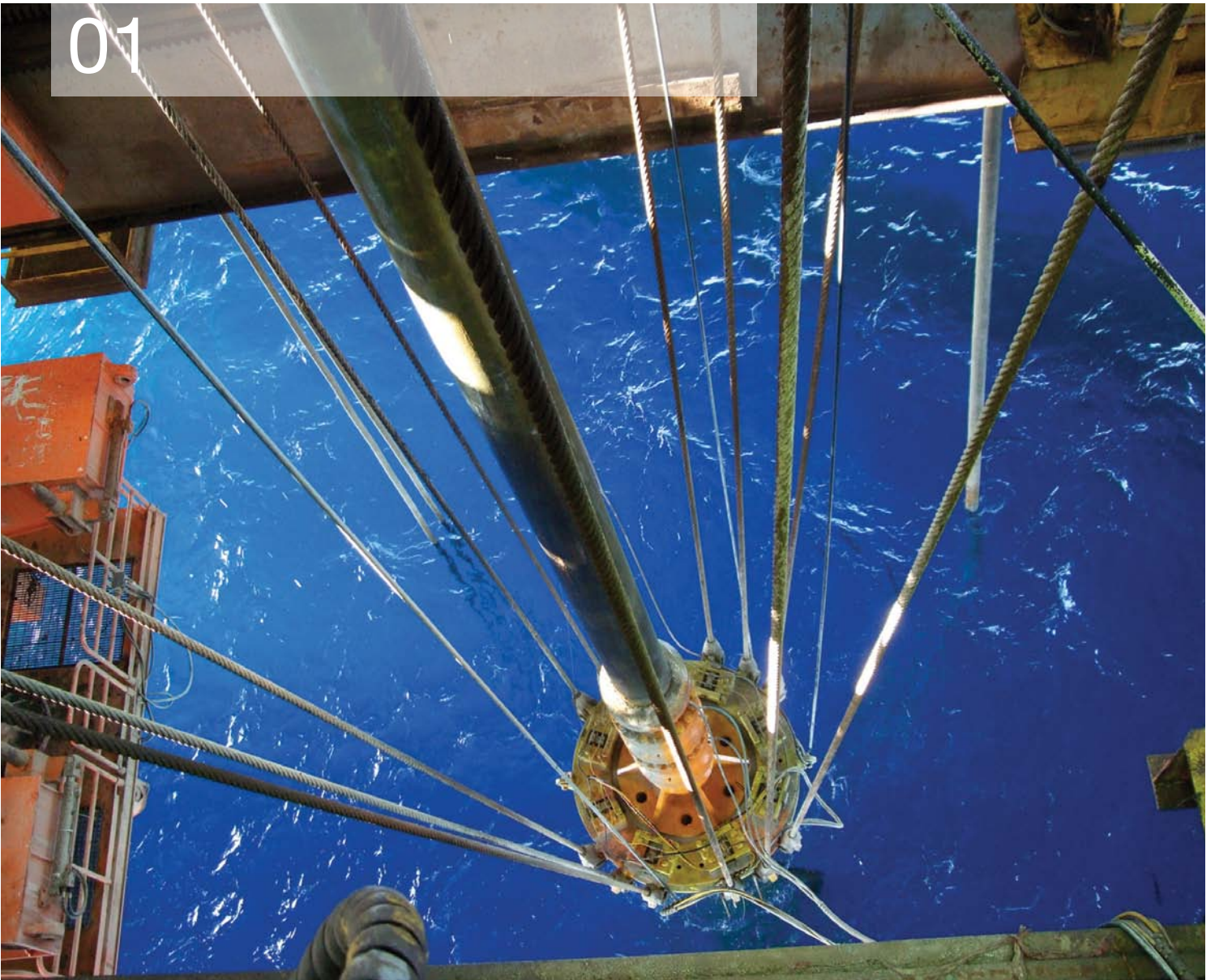
Standing: Raul Sendic, President of ANCAP. Seated from left to right: Oscar Villadiego, President of the Board of Directors of ARPEL and Cesar Gonzalez, ARPEL Executive Secretary.



AERIAL VIEW OF THE EXHIBITION

held in conjunction with the Forum, where several companies and institutions related to the industry participated.

01



LATINVE&P - Latin America Investment Opportunities in E&P

Vaca Muerta in Argentina, the Brazilian pre-salt and deepwater exploration begin to gain momentum within the regional exploration activity. According to data from the CAF, Latin America has reserves of crude oil of about 335,708 million barrels (MMbbl) and about 7,980 billion cubic meters (MMcmd) of natural gas. According to studies by the oil company British Petroleum (BP Statistic Review of World Energy), in June 2012, Venezuela had the largest reserves of crude oil in the planet, with 296,500 MMbbl, which represents 17.9 % of the total global reserves.

Another oil power in Latin America is Brazil, which ranks second in South America, with 15,3 billion bbl. Brazil has developed strategies for attracting investments, especially in the bidding rounds for exploration, as stated by **Helder Queiroz Pinto Jr.**, Director of the National Agency of Petroleum, Natural Gas and Biofuels (ANP) of Brazil.

As he stated, Brazil is undergoing an exceptional moment with great expectations about the pre-salt, although it is expected that there will be regulatory definitions for its development. In addition, there are exploration opportunities both in conventional and unconventional geological structures. The ANP estimates that Brazil has about 300 TCF of gas, but the figure is taken with caution, considering a horizon for medium- to long-term development. Three bidding rounds for exploration in the Brazilian territory are scheduled for 2013. This is considered key after a break of four years.

Uruguay is also having good results. ANCAP recently signed a couple of exploratory contracts for offshore seismic surveys, which are considered “unprecedented”. **Hector de Santa Ana**, Director of E&P, ANCAP, considered it is very important to work in the knowledge of marine basins

through working groups aimed to involve exploration companies. “The central goal was, starting with offshore basins of the country, to create conditions within a process that may be attractive and really favorable; we are a step forward in exploration, and ANCAP has a strong participation”, he added. The bidding round in 2012 enabled the country to attract 19 offers from 9 companies, among which are BP, BG Group, Total and Tullow Oil.

Oscar Claros, Director of Contract Negotiation and Management of the Bolivian state-owned YPF, pointed out that last year Bolivia undertook a new round for exploration after more than 20 years, which has marked a milestone in the history of hydrocarbons in the country. Fifteen areas were tendered in that round, five of which were for exploration and production contracts.

The results have been encouraging. Currently, the country has 59 blocks where exploration and exploitation activities are being conducted. He also stated that natural gas production has tripled in the last 10 years to reach 50 MMcmd in 2012, with a projection of 77 MMcmd for 2020. At present, 80% of gas production is intended for export (Brazil and Argentina).

Meanwhile, Colombia has developed a public policy in the last decade that has made it possible to align a clear initiative to boost the hydrocarbons and mining sectors, **German Arce**, President of the National Hydrocarbons Agency (ANH) of Colombia, said.

As a result, Ecopetrol has managed to surpass the goal of producing one million barrels and is placed within the 20 companies with such levels of production. “We are now working on new strategies to define how to increase our level of reserves”, he added. The country had an increase in foreign



Helder Queiroz Pinto Jr.
National Agency of Petroleum, Natural Gas and Biofuels (ANP) of Brazil



Hector de Santa Ana
ANCAP



Oscar Claros
YPFB



German Arce
National Hydrocarbons Agency (ANH) of Colombia



Pedro Arce Chirinos
Perupetro



Carlos Lambre
OFEPHI



Wanda Lee Delandro-Clarke
Ministry of Energy and Energy Affairs of Trinidad & Tobago

investment in the hydrocarbon sector from 10 to 35 %. “The sector has been one of the largest beneficiaries of the inflow of foreign capital”, Arce said. For **Pedro Arce Chirinos**, Manager of Planning, Budget and Information Technology of Perupetro, Peru is an underexplored country. There are currently 400 non-drilled structures in 18 oil basins. The goal for this year is to achieve 24 exploratory wells with a rate of subsequent investment of US\$2 billion per year for the production of fuels and gas.

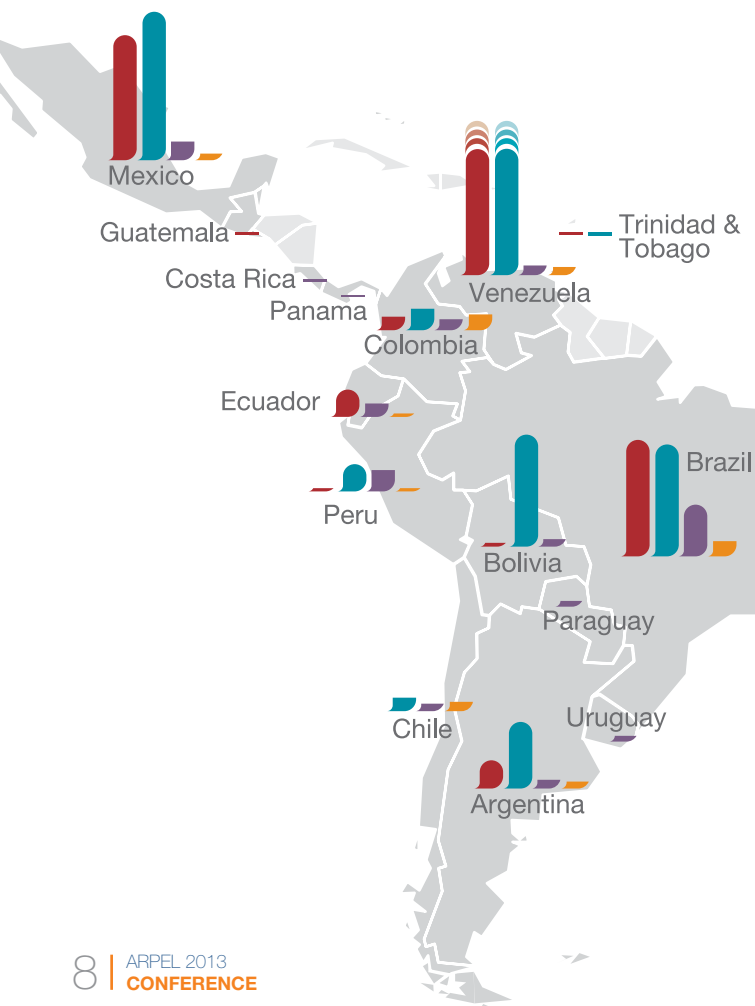
In this context, the country is in an

international bidding process for nine offshore lots in four basins in the central and southern areas. The great challenge, beyond the activity of prospecting, is to go through the phase of prior consultations with the communities in all the exploration areas to consolidate the hydrocarbons production.

Carlos Lambre, Executive Secretary of OFEPHI, said that in Argentina the debate is focused on the unconventional hydrocarbon wealth of the Vaca Muerta formation. While the potential is large, the hesitation in the possible development of deposits lie in the high investments that would

be required, as well as the technology that should be applied, which can make adequate energy product prices unviable.

Finally, **Wanda Lee Delandro-Clarke**, Geophysical Specialist from the Ministry of Energy and Energy Affairs of Trinidad & Tobago, stated that the energy potential of the Caribbean country has been exploited for a century, with a historic production of more than 3,5 billion barrels of oil and more than 3,8 billion barrels of oil equivalent of natural gas. Between 2006 and 2012, improvements were made in the tax system, which meant a recovery of costs of 60 to 80% in the bidding round for 2012, implying an important aspect to attract new investments.



ABUNDANCE OF ENERGY RESOURCES AND LITTLE UNIFORMITY IN DISTRIBUTION

- Oil reserves
- Gas reserves
- Coal reserves
- Hydroelectric Potential

ENERGY	PROVEN RESERVES	UNITS	SCOPE IN YEARS
OIL	335,708 MMb	10 ⁶ bbl	93
NATURAL GAS	7,980 TCM	10 ⁹ m ³	28
MINERAL COAL	13,871 MMt	10 ⁶ t	129
HYDROELECTRIC POTENTIAL		693,506 MW 3,459,835 GWh/year	

SOURCE: OLADE-SIEE, 2013

tight gas
& oil

shale
gas

gas
hydrates

shale
oil

coal bed
methane

heavy
oil

tar
sands

Latin America Unconventionals

Present and future

The United States has become a place where unconventional hydrocarbons, particularly shale gas, have given rise to a dynamics from which many lessons can be gained for the industry. **Jeff Meisenhelder**, Vice President of Unconventional Resources of Schlumberger, stated that it is not enough to succeed in the discovery of this type of reserves, there are also other critical factors to be considered, such as access to geological formations, the market, the profitability and the consolidation of an efficient operation, among others. "All these factors must be added for the project to be successful", he said. For this senior executive of Schlumberger, the perseverance of Americans has made it possible to overcome the barriers that initially demanded time and high costs. As an example, he said that 300 wells were drilled in the United States until the first results began to be seen. During that time, emphasis was placed on more efficient working models that allowed, in at least 100 wells, to reduce the costs by 45% through proper planning of projects, the use of advanced technology and efficient management in the chain of supply. "Drilling of wells that took 48 days fell to 17 days. This is efficiency", he said. **Carlos Portela**, Vice President of Operations of Pluspetrol, considered that due to the high amounts of

investment and risk ratios that the energy exploration demand, research in production requires "drilling fewer wells, but these should be more profitable", as well as "improving the collection techniques".

Portela pointed out that the focal points on which companies are concentrated to optimize investment are four: good rock (field), wells with productivity, markets with high demand and license to operate.

Paulo Cezar Aquino, Chief Executive Officer of the international Area of Petrobras, referring to 2011 data from the International Energy Agency (IEA), stated that, from a total of 6,622 TCF reserves of unconventional resources, Argentina has 774 TCF, which places the country third in importance at the global level, after China and the United States.

In this context, he said that in the neighboring country, expeditious processing of state permits and training of human resources to meet the challenge of unconventional hydrocarbons development are urgently required, in addition to reducing the risks of possible amendments to the legislation that may affect investments.

Bob Fryklund, Vice President of Research at IHS, said that Argentina appears as the main focus of attention for the development of unconventional hydrocarbons in Latin America,

"From a total of 6,622 TCF reserves of unconventional resources, Argentina has 774 TCF, which places the country third in importance at the global level, after China and the United States".

Paulo Cezar Aquino
Chief Executive Officer of the international Area of Petrobras

"Argentina appears as the main focus of attention for the development of unconventional hydrocarbons in Latin America, followed by Colombia".

Bob Fryklund
Vice President of Research at IHS



Jeff Meisenhelder
Schlumberger



Carlos Portela
Pluspetrol



Paulo Cezar Aquino
Petrobras

followed by Colombia. However, in the working group led by this expert, industry executives expressed their fears for the instability of the region. The most recent case that was mentioned by several attendees was the expropriation of assets that Repsol owned in YPF.

In this context, it was raised that there is urgent need to create a legal framework that can bring certainty to investments as well as streamline the environmental permits and licenses, which are usually lengthy due to political considerations and limit the development of this sectoral activity. In terms of the development of

unconventional crudes, according to **Marcela Segade**, Downstream & Petrochemicals Manager for Latin America of PFC Energy, shale oil production in the United States and of heavy crudes in Canada is changing the North American energy scheme, which is altering the international dynamics. Canada will replace Latin America and the Middle East in terms of heavy and extra heavy crude oils. Latin America will have to diversify its crude oil exports beyond the United States, focusing on Asian markets, especially the Chinese market, leaving the European market as a second option.

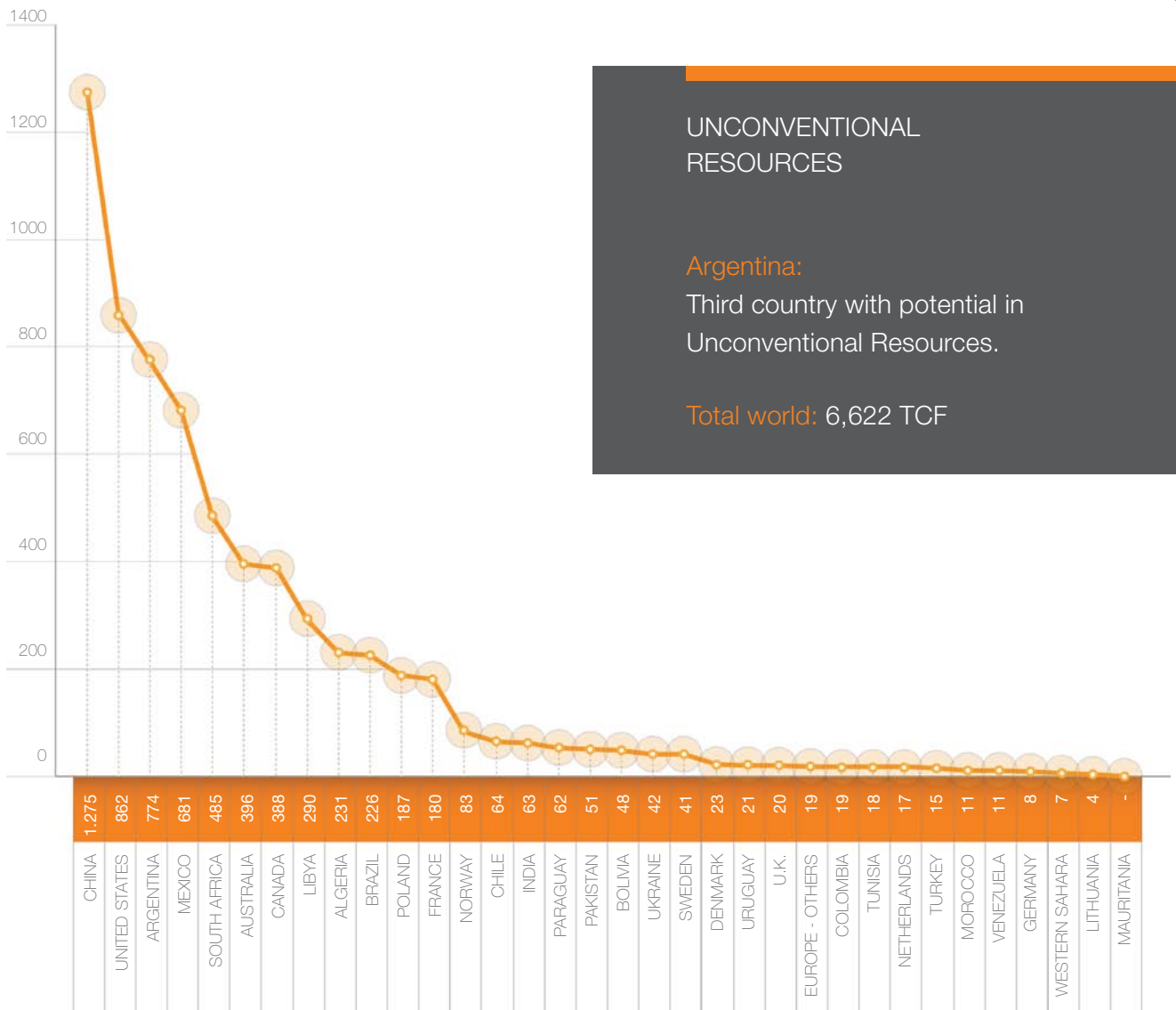


Bob Fryklund
IHS



Marcela Segade
PFC Energy

TCF



UNCONVENTIONAL RESOURCES

Argentina:
Third country with potential in Unconventional Resources.

Total world: 6,622 TCF

SOURCE: EIA (ANNUAL ENERGY OUTLOOK 2011)



Fostering Upstream Investment in Latin America

Climate, Opportunities
and Hurdles

For 2030, the world's population will consume around 100 million barrels of oil per day, an unprecedented volume that will undoubtedly require large reserves of hydrocarbons and, above all, guarantees to make them produce. In this scenario, Latin America emerges with expectations. It owns about 20% of the world proven reserves of oil, 4% of gas reserves and 2% of coal reserves, in addition to a huge potential for the development of renewable energies. This is why it is envisioned as a potential energy source for global consumption. However, the years have shown that the continent also has one of the more unstable political, economic and social climates; therefore, investment opportunities in the upstream sector must face a series of obstacles and challenges. The greatest barriers fall under four aspects: regulation, profitability, environmental permits and the complex social environment surrounding the projects. Therefore, according to the Environmental and Social Corporate Manager of Pluspetrol, **Sandra Martinez**, a political reading of the industry in the environment where it is developed acquires great importance. **Oswaldo Madrid**, General Manager

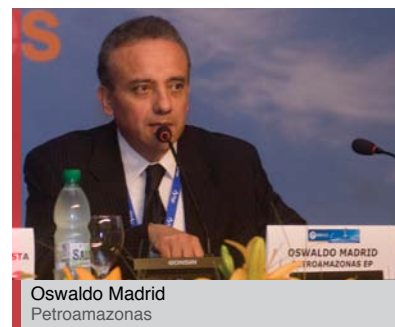
of Petroamazonas, said that the search should aim to consolidate the upstream sector through a regulatory framework that is sufficiently secure and stable to meet production goals and consolidate the relationship with member companies and States. According to **Renato Bertani**, CEO of Barra Energia, "work must be done to ensure a balance between protectionism and the expansion of the hydrocarbons business with ethics and transparency". **Sebastian Borgarello**, Vice President of Upstream Consulting of Wood Mackenzie, considered that this implies ensuring the stability of contractual terms and rules, which also has to do with credibility. "And to have credibility, governments should maintain the rules of the game and, in the event of any change, compensate companies properly", he said. Similar position expressed **Carlos Ormachea**, CEO of Tecpetrol, who asserted that sovereign states have the power to change the rules and what is being asked in these cases is that there is a reasonable compensation. "It is understandable that it might be necessary to change rules, what is difficult to accept is an arbitrary modification of the net worth as a result of it", he said.

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Sandra Martinez
Pluspetrol



Oswaldo Madrid
Petroamazonas



Renato Bertani
Barra Energia



Sebastian Borgarello
Wood Mackenzie



Carlos Ormachea
Tepetrol

Profitability is the second risk factor at the regional level. Analysts state that conditions must be created to enable projects to be beneficial, which has to do with adequate fiscal terms and the possibility that investors may use profits as they deem fit.

Besides, they think that there should be a higher predictability of permits, particularly environmental permits, and that the time to obtain them should be reduced. Likewise, conditions should be developed to harness the social situation in the areas of influence of oil operations, as well as the safety of operations; two recurring issues of

analysis within the industry. According to **Dana Coffield**, CEO of Gran Tierra, this is the result of the uncertainty resulting in the region from the constant management changes of some governments, which makes it difficult to predict what will happen at the social and environmental level in the different countries. "There are many obstacles above the earth, not geological, but related to governmental policies, that may be discouraging due to a lack of clarity", he said. Despite this, Coffield said, the opportunities to develop the upstream sector in Latin America can be

considered limitless, because the region has large reserves, in addition to areas with enormous potential that have not yet been explored.

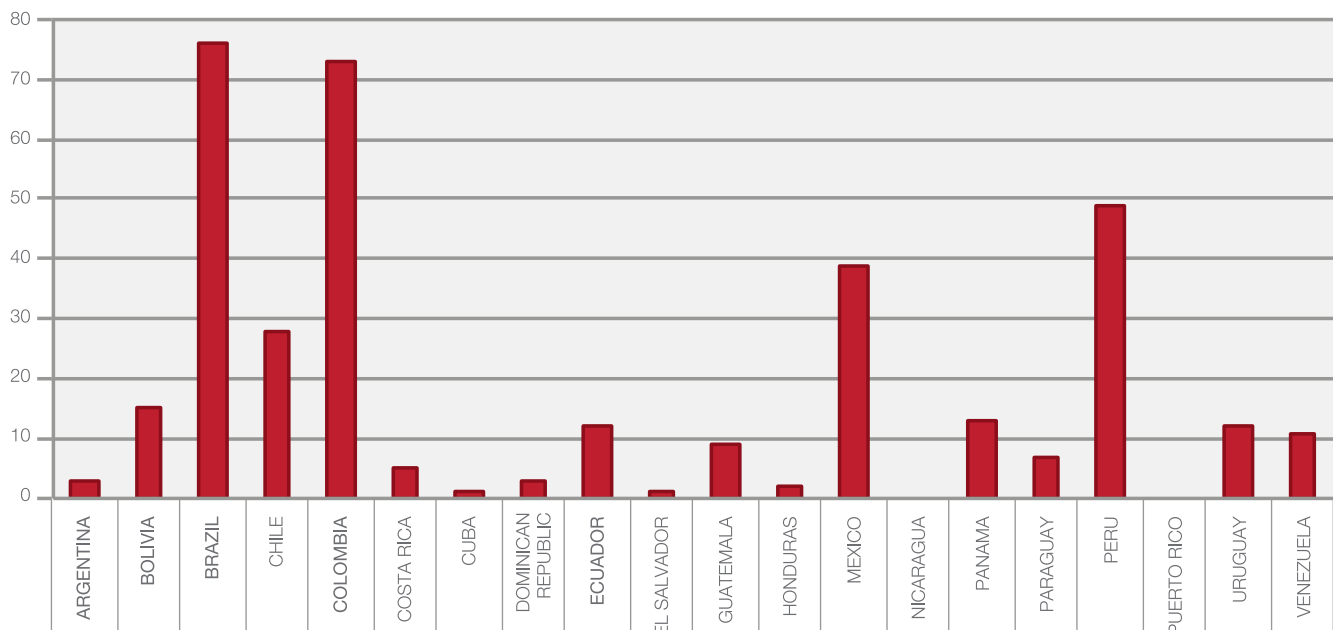
Evandro Correa Nacul, Executive Director for the Pacific Region of Repsol, contributed to the analysis indicating that the rules of the game to make investments should be made clear. The executive pointed out that the legal and fiscal framework of the oil industry is very important, since relationships between corporations and States are long-lasting, between 30 and 40 years on the average. "So, we have to know what the rules of the game will be

LATIN AMERICAN COUNTRIES WITH THE BEST CLIMATE FOR INVESTMENT

Respondents:
48% Upstream
52% Midstream, Downstream and others

LATIN AMERICA OIL PRODUCERS (EIA):

- 1 Mexico
- 2 Brazil
- 3 Venezuela
- 4 Colombia
- 5 Argentina
- 6 Ecuador



SOURCE: BNAMERICAS, JAN. 2013

during this period”, he said.

Barbara Bruce, President and General Manager of Hunt Oil Company Peru, stated that a key element in achieving new levels of investment in the sector will be the decentralization of the roles of governments to avoid delays in the granting of environmental permits. Similarly, it is necessary to understand clearly the social conflicts in certain areas of exploration.

Along this line, **Izeusse Dias Braga**, Managing Director of ILGR, said that companies have to find the systematic way to merge the

environmental, social and economic sustainability of their business. This is not only important for the future of the company but also for the planet.

“The industry is not independent, it must establish goals that are compatible with the development of communities; generate value and wealth beyond economic issues”, he said.

One thing became clear during the presentations: the challenges of the Earth surface are as crucial as the subsoil. At present, the oil industry is under the scrutiny of an environment that is aligned and defends socio-environmental causes

with vehemence.

Therefore, now it is not enough that the sector contributes to economic growth (findings, new technologies, fuel supply, energy sovereignty, etc.), but it is almost always judged in a negative way in the areas of governance and sustainable development due to its potential environmental, social and cultural damages.

“A new industry profile is required today. Managing impacts is no longer enough. It is now necessary to add the shared value with others and for others”, concluded **Ernesto Borda**, Executive Director of TRUST.

“The industry is not independent, it must establish goals that are compatible with the development of communities; generate value and wealth beyond economic issues”.

Izeusse Dias Braga
Managing Director of ILGR

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Energy Security

in a World with
Increasing
Challenges and
Uncertainties

Latin America is one of the richest regions in energy resources, but not all of its inhabitants have access to them, or what is worse, the distribution of those resources is one of the most unequal in the world. **Hugo Altomonte**, Director of the Division of Natural Resources and Infrastructure of ECLAC, was the most emphatic to ensure that while the poverty rate has declined in 2011 by 1.6 percentage points in relation to 2010, and the indigence rate has decreased 0.6, continuing the downward trend that has characterized this decade, there are currently more poor people than in 1980 and inequality has evolved unfavorably, with Latin America being the most unequal continent in the world: 10% of the population holds the richest 32% of the income, while the poorest 40% receive only 15%. “Public policies are needed to address the issue of inequality”, he stated, specifying that the challenge for Latin America is to universalize energy services with reasonable prices, since 99% of those who do not have electricity are poor and one of the main tasks would be to eliminate the distortion caused by energy subsidies.

Meanwhile, the Director of the Latin American Regional Center of the United Nations Global Compact, **Diana Chavez**, said that energy poverty is the inability of a home to satisfy a minimal amount of energy required for its basic needs, with the consequences that follow in the well-being of individuals and the daily exercise of human rights and citizenship. In this regard, Latin America has the largest gap between those who have and those who have not, and a specific indicator of this is the access to services. The relationship between unemployment and those who can pay for gasoline and light is entirely direct. “The social and environmental challenges that we are facing in the region are precisely how to maintain the energy matrix with clean renewable sources, availability at affordable costs, and, above all, in a modern and efficient manner, where innovation and development are part of the sector”, she said. In regard to poverty issues and foreign investment, Chavez recalled that globally available figures correspond to previous cycles, where 50% of the population live on less than US\$2 a

day. “The least developed countries are those that receive, of course, a lower flow of foreign investment, and this has a direct impact on development infrastructure, energy and development itself”, she added. **Ramiro Fernandez**, Director of Climate Change and Energy for Latin America at the Avina Foundation, went further to assert that, in Latin America, one every four people in rural areas do not have access to any type of energy. “The trend indicates that in 2020, about 20 million people in rural areas will have no energy”, he said, arguing that, despite these preliminary figures, it is considered that the region has good indicators in comparison with other developing countries, and stated that it is possible to overcome the lack of access to energy. “Poverty is at the side of inequality. Access to energy is one issue. When we refer to the universal access to energy we are talking about basic services and actions for productive use. We believe that it is possible to bridge this gap, although we cannot do it alone; we need private players and Governments”, he added. Less than 10% of the population of Latin America and the Caribbean,



that is, around 40 million people, have no access to modern electricity services. Although this number has been declining, there are still a significant number of people without access to energy. Between 20% and 90% of the rural population has no access to electricity. With these data, **Mark Lambrides**, Director of Energy and Climate Change of the OAS, described graphically the existing inequalities between urban and rural areas.

In addition, the expert said that it is pertinent to consider that as the region continues to grow, consumption will increase up to 2,500 terawatt per hour (TW/h) in 2030, and in order to meet this demand, an additional capacity of 239 gigawatts (GW) is required. Lambrides stated that the

diversification of energy resources, connections and cooperation among countries and energy efficiency were important issues to meet these requirements.

Hamilton Moss, Corporate Vice President of Energy of CAF, argued that, for the moment, Latin America has been able to respond to the challenge of meeting its energy needs. However, in the medium term, it faces the challenge of investing between 1 and 2 trillion dollars, mainly in electricity, natural gas and oil refining, to cover an energy demand that, in the last decade, grew at a rate of 30%. “The region can be part of the solution to the global energy problems”, he said.

Latin America has been able to respond to the challenge of meeting its energy needs. However, in the medium term, it faces the challenge of investing between 1 and 2 trillion dollars, mainly in electricity, natural gas and oil refining, to cover an energy demand that, in the last decade, grew at a rate of 30%. “The region can be part of the solution to the global energy problems”.

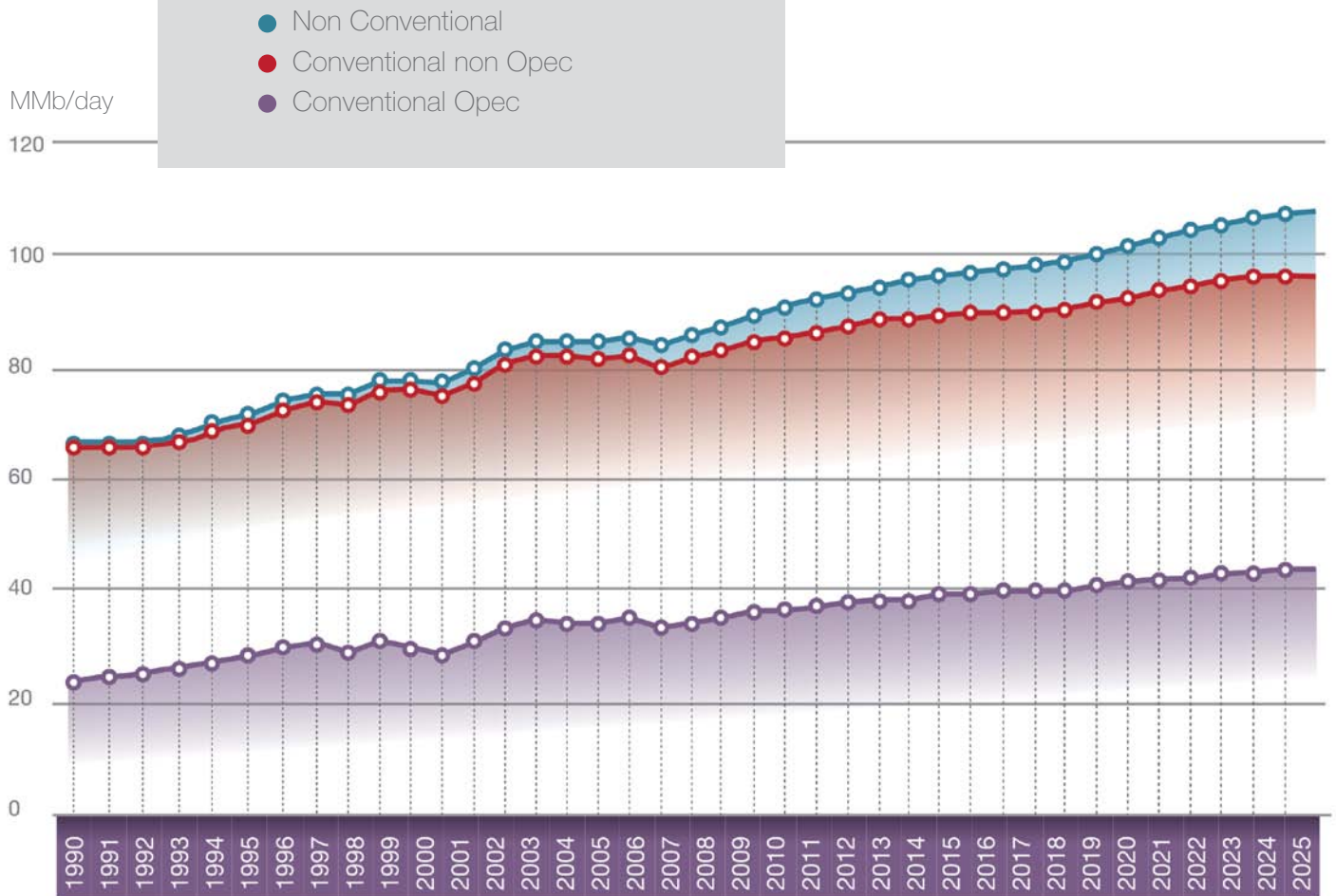
Hamilton Moss
Corporate Vice President of
Energy of CAF

THE THIRST FOR ENERGY IS INCREASING

The world's population is growing: In 1960, the world's population was 3 billion people; in 2013, 7 billion, and for 2050, it will be 9 billion, which means not only that the world's population will increase, especially due to the expansion of China and India, but that there is a need to get more people out of energy poverty. This was highlighted by **Pierce Riemer**, General Director of the World Petroleum Council (WPC), who said that this situation represents a great challenge for the planet as regards the supply of energy.

"Fossil fuels will continue playing an important role in the future. In fact, the world is not running out of oil and gas. Both conventional and unconventional reserves will continue to be vital. As in the 30s, we continue to promote oil for the benefit of mankind", Riemer said.

WORLD CRUDE OIL AND LIQUID FUELS CONSUMPTION



Liquids
 Conventional (oil, condensate, natural gas plant liquids, refinery gains)
 Non-Conventional (oil sands, extra heavy oil, biofuels, GTL, CTL)

SOURCE : EIA INTERNATIONAL OUTLOOK - OCTOBER 2011



Vision to the Future

Economic and Energy Scenarios

According to **Milton Costa Filho**, Executive Secretary of the Brazilian Institute of Petroleum, Natural Gas and Biofuels (IBP under its acronym in Portuguese), in the future, historians will have many problems to understand and explain energy management in the early twenty-first century considering the current patterns of fossil fuels consumption. In fact, according to Costa Filho, the dependence on oil and gas will continue for many decades.

For this reason, a global challenge will be the huge investment (37 trillion dollars, according to estimates of the International Energy Agency) that humankind will have to make until 2035 to meet the projected global demand.

All of this occurs in a very complex global context. "A concern and a major risk is how to take long term decisions (usual in the industry) in an increasingly short-term world", Costa Filho said.

"We see Europe with economic crisis and unemployment, the United States with serious fiscal flaws, an incipient Arab Spring in the region with the largest oil and gas reserves in the world, China with ancestral social, environmental and political problems, Latin America and Africa with unpredictable and volatile policies", he illustrated.

According to **Augusto Lopez-Claros**, Director of Global Indicators and Analysis of the World Bank, another factor to take into account is the heavy load that climate change will represent, especially to countries with less income.

Despite this, the speaker considered that the scenario will not be pessimistic for Latin America, but full of challenges. By 2030, the continent's energy demand will more than double; therefore, there is a need for cooperation among countries, which implies that the bilateral geopolitical frictions should not be barriers to a true energy integration. In a far-reaching look **Craig Kelly**, Director for the Americas, International Governmental Affairs of ExxonMobil Corporation, coincided with the previous speakers in that demand for fossil fuels will continue to be decisive. The projection that until 2040, 2 billion people will be added to the world's population, speaks of an increase in global consumption.

As an indicative data, in the next three decades, about 1,6 billion light vehicles will be passing by the planet; this represents the double of the current car fleet. Similarly, the mix of the energy matrix will continue to evolve and the greatest development in the supply of oil will be in areas that require the use of high technology: deepwater and unconventional.

Martiniano Cunha Lopes, Vice President of Energy for Latin America of KPMG, supplemented the projection arguing that China will continue to be the largest consumer of energy of the planet (it currently absorbs 37% of global production), followed by the United States and the European countries. In this context, the analyst stated that the main challenge for our region will be to do things better than others to take advantage of the high demand.



Milton Costa Filho
Brazilian Institute of Petroleum, Natural Gas and Biofuels (IBP)



Augusto Lopez-Claros
World Bank



Craig Kelly
ExxonMobil Corporation



Martiniano Cunha Lopes
KPMG

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Martiniano Cunha Lopes
Vice President of Energy for Latin America of KPMG

06



CONFERENCIA DE PETROLEO Y GAS

ARPEL 2013

América Latina y el Caribe

9-11 de abril Punta del Este, Uruguay



Transformación sostenible con liderazgo responsable

Ideas · Soluciones · Acciones



Human Talent, Technology and Innovation

The Key to the
Sustainable Growth of
the Industry

With a rapidly aging professional population, fast technology developments and the difficulty to attract and retain new talent, the industry is facing one of its greatest challenges in effectively transferring and preserving knowledge.

According to **Ricardo Cruzat**, General Manager of ENAP, the current labor market in Chile poses great challenges for the oil companies, as they have to look for talent and then be able to retain it. “Today, young people look for change; there are few people that start working in a company thinking of retiring from it”, he said.

He also explained that innovation does not mean buying new machinery or equipment, but rethinking the way to carry out processes and create value. In this regard, he gave the example of the particular case of ENAP. In times of adversity, it has retained talent by giving relatively young people the opportunity to be involved in decision-making. They may be able to give great solutions, since “different results are not achieved when doing more of the same”, he said.

According to **Antonio Gomis**, General Director of Repsol, innovation, technology and talent are part of the DNA that Repsol wants to build. The executive quoted the words of George Bernard Shaw: “The reasonable man adapts himself to the world; the unreasonable one persists in trying to adapt the world to himself”. And the somewhat ironic conclusion is that, “therefore all progress depends on the unreasonable man”; this is what Repsol is looking for: creative people who anticipate, he said.

He also stated that there has been an increased inclusion of women in the governing bodies of the company since 2007. “In 2007, female executives represented 6% of the company staff, while in 2012 this figure was 14%; it is still a very low figure, but it is increasing. On the contrary,

there is already a smaller difference at a global level in a profession that was traditionally considered for men”, he concluded.

According to **Hatem Soliman**, President for Latin America of Schlumberger, identifying talent, defining continuous training programs for each profile, and determining the objectives from the beginning of the year and the promotion based on merits are some of the main points that Schlumberger considers for its sustainable growth. The executive stated that it is important for the company to identify future leaders in advance and that individual training plays a very important role. “Training is continuous for engineers in the first three years of their career; the company invests a little over US\$100 thousand”, he said.

On the other hand, he maintained that in Latin America, Schlumberger is recruiting about 1,000 engineers for the areas of engineering, technology and operations, and that its goal is to recruit up to 30% of women. “We are changing the view regarding operations and this is something very important for the industry”, he said.

Weatherford tends to look for people who are motivated from the start to go beyond their duties. “We have always challenges in this area because there are many people who want to be a part of this team, but very few want to lead the team”, **Kyle Chapman**, Vice President for the Western Hemisphere of the company, said.

In previous years, companies were concerned about their financial results; now they are also concerned, but talent management is part of this concern, according to this expert. “It is part of the daily activities; the manager has to think how he/she is going to obtain the resources and how he/she is going to train them and retain them”, he said.



Ricardo Cruzat
ENAP



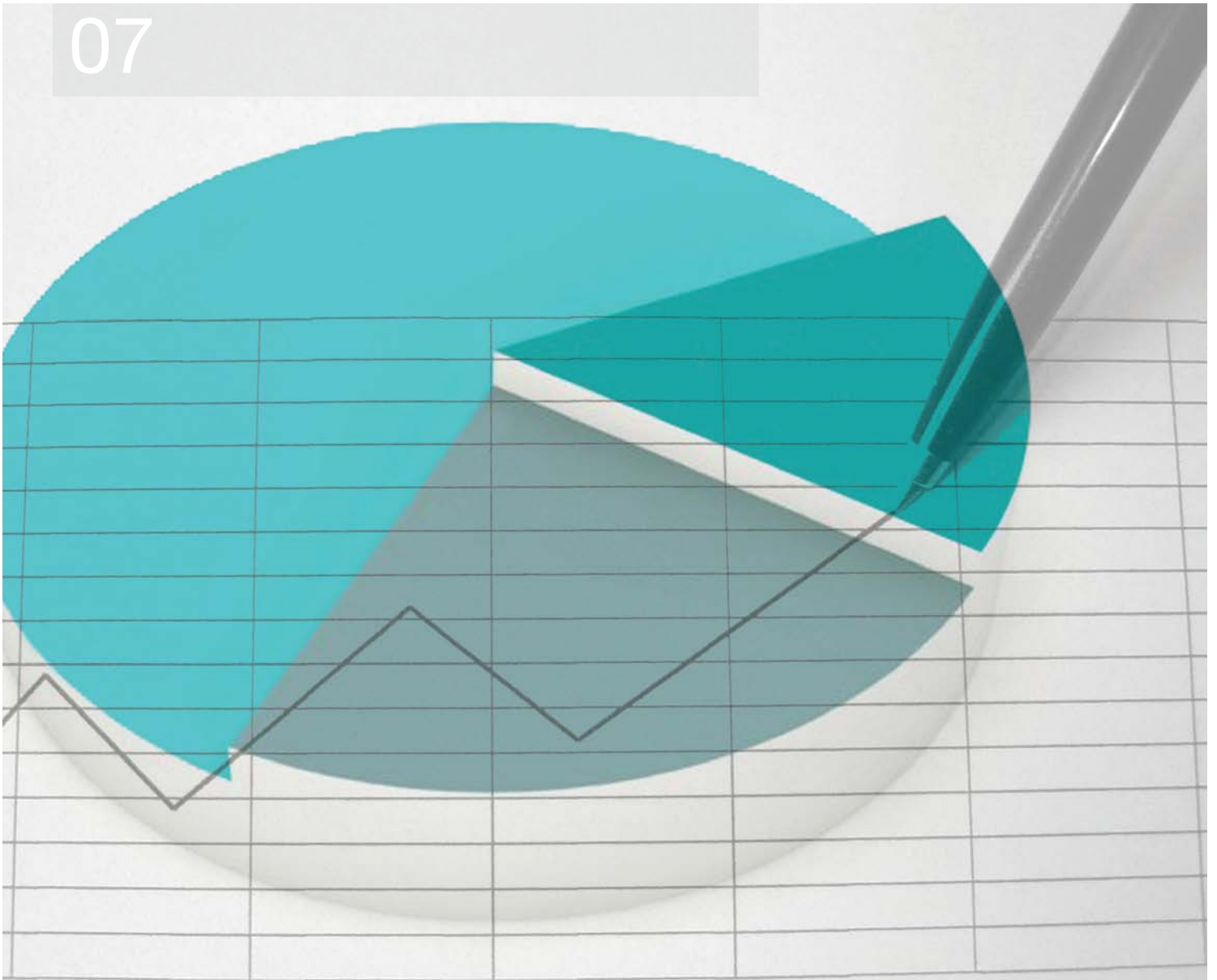
Antonio Gomis
Repsol



Hatem Soliman
Schlumberger



Kyle Chapman
Weatherford

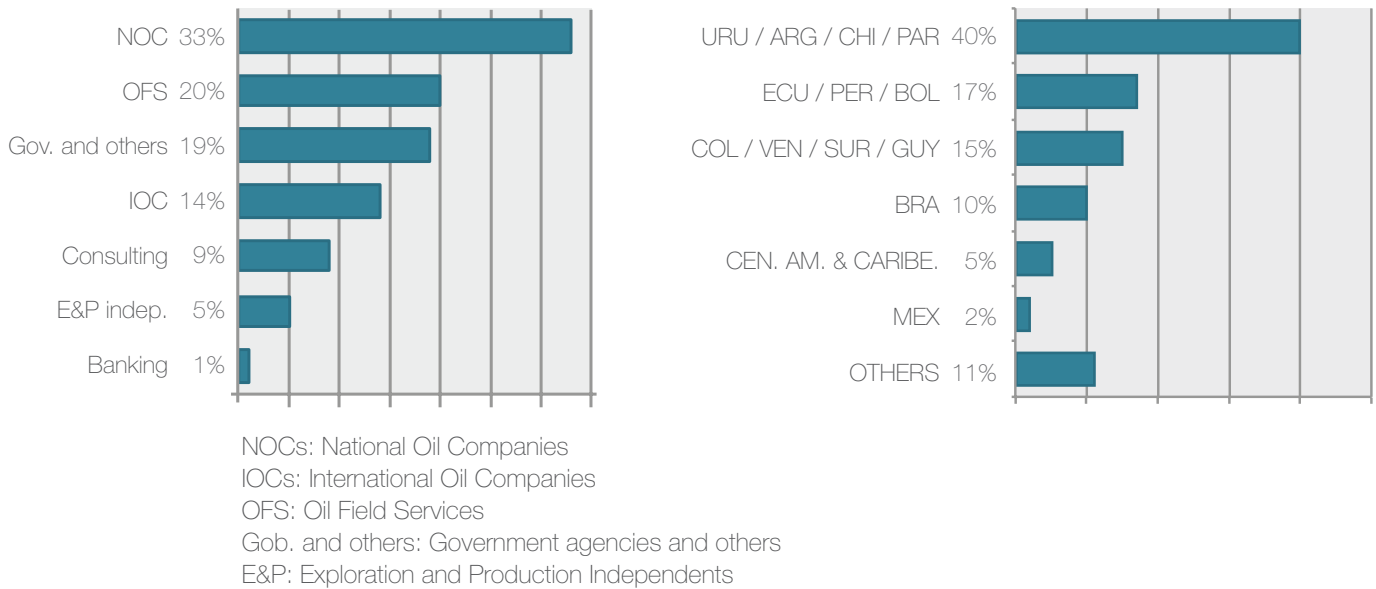


Results of the Interactive Survey



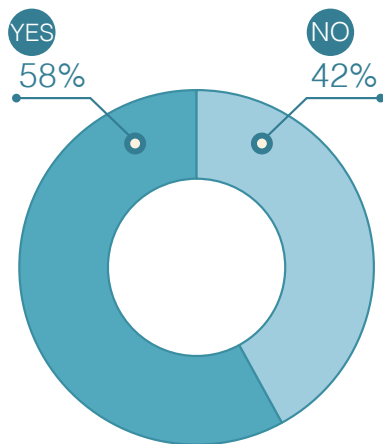
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Attendees with broad regional representation of the industry and its value chain

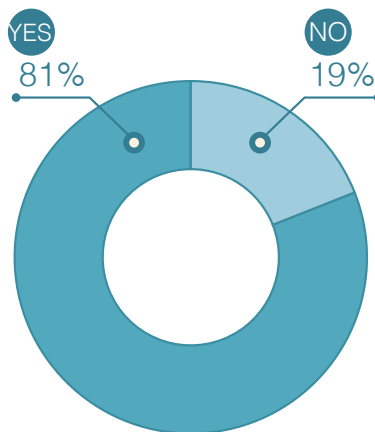


Great potential, but will require fiscal incentives and clear policies

Do you believe shale gas will be a game changer in Latin America in a par with North America?



Do you think that unconvensionals deserve a special fiscal regime with incentives?

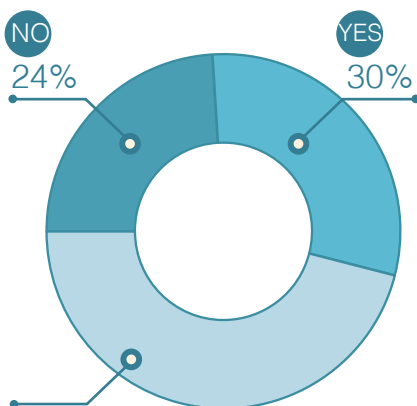


Almost 60% of attendees estimated that shale oil and gas will change the game in Latin America and the Caribbean, and that they will be transformed into engines of growth for the industry, competing in the long term with conventional hydrocarbon reserves.

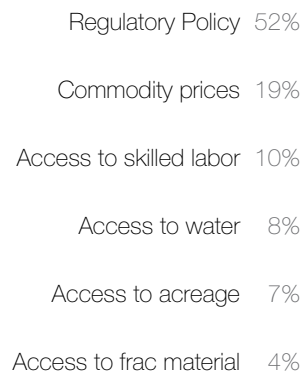
At the same time, there was a broad consensus regarding the fact that in order to develop unconventional reserves, it will be necessary to establish tax incentives, given the high investments required.

The regulatory policy was identified as the aspect that most affects their development in the region, far more than other aspects related to the access to technological, human, material and other resources.

Will unconvensionals compete with traditional reserves in the near future?



What will affect the development pace of unconvensionals the most in our region?

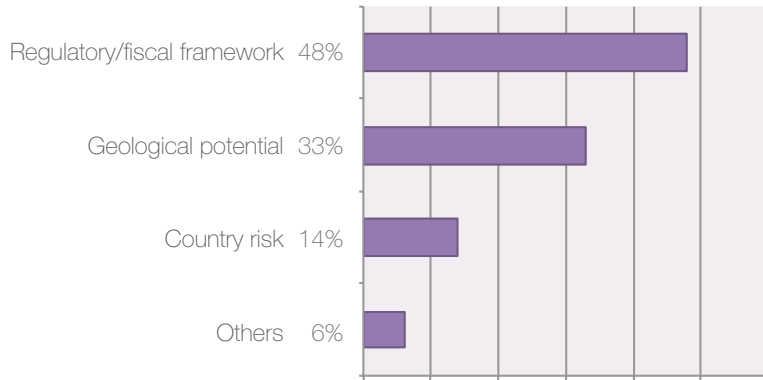


30% GRADUALLY

Totals may not add up 100% due to rounding

The regulatory aspects and the obstacles to socio-environmental licensing are the keys to promote the industrial development of the region.

Which of the following factors you consider determinant in deciding where to invest?

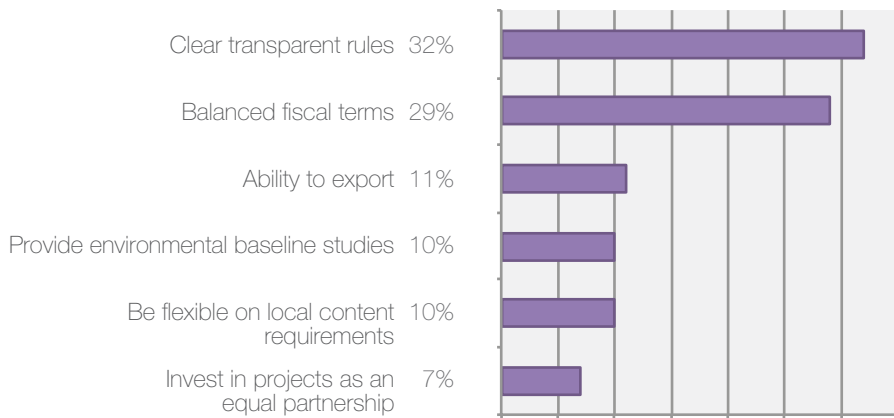


The regulatory framework was chosen as the most important aspect considered by companies before making an investment decision, followed by the geological potential.

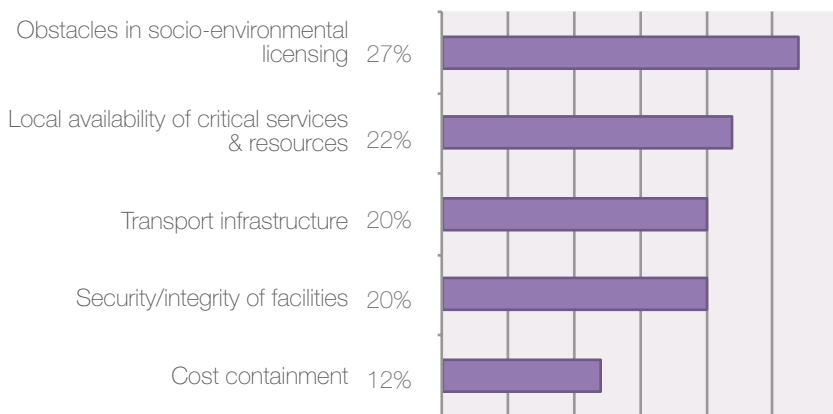
At the same time, maintaining clear and transparent rules, in addition to providing balanced fiscal conditions, were the options chosen in the survey regarding how the countries of the region may attract investments.

On the other hand, the obstacles found in the process of socio-environmental licensing were considered as the main challenge faced by the industry in the region with reference to business development in the upstream sector.

What can countries do to attract more investment in E&P?



The greatest challenges in the development of the upstream business

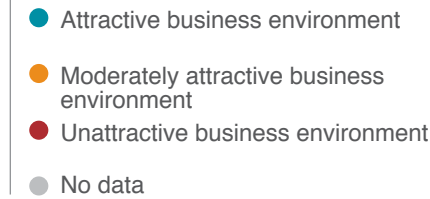


Brazil and Colombia were elected as the most interesting countries to invest in E&P, followed by Peru, Uruguay and Mexico

Brazil, with its pre-salt resources and its large market, along with Colombia, which has recently awarded around 50 blocks of E&P in its latest bidding round, were regarded as the most attractive countries for investment.

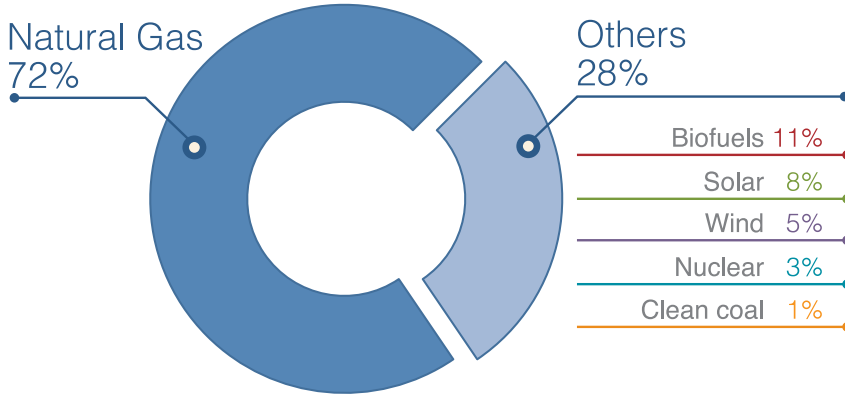
Meanwhile, Peru, that has successfully developed its gas reserves in recent years; Uruguay, that is exploring its offshore potential; and Mexico, with its large market and its strategic location, were considered as countries with a moderately attractive investment climate.

Finally, Argentina, Bolivia, Ecuador and Venezuela were considered as the least attractive to invest.



There is a consensus that natural gas will play a very important role in the next 20 years, being fundamental in the transition to cleaner energy

Which of the following do you anticipate will become the dominant clean air energy source within the next 20 years?

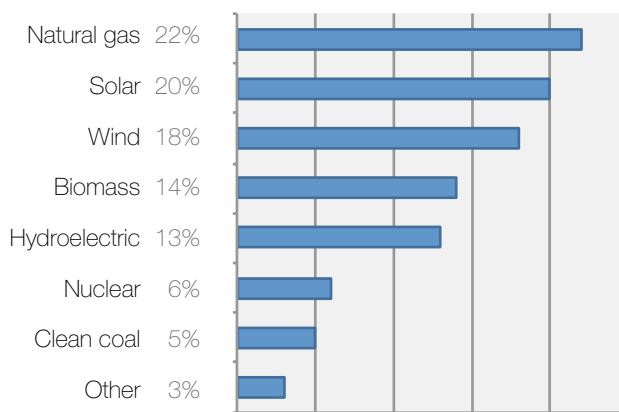


Natural gas was considered by a wide margin the type of clean energy with more development in the coming years.

The possibilities opened up by the development of LNG and the potential of the unconventional reserves in the region, coupled with the need to make the transition to cleaner energy, would explain this situation.

On the other hand, in terms of emphasis on the development of environmentally friendly technologies, attendees felt that natural gas, solar and wind energy should be the most developed energies.

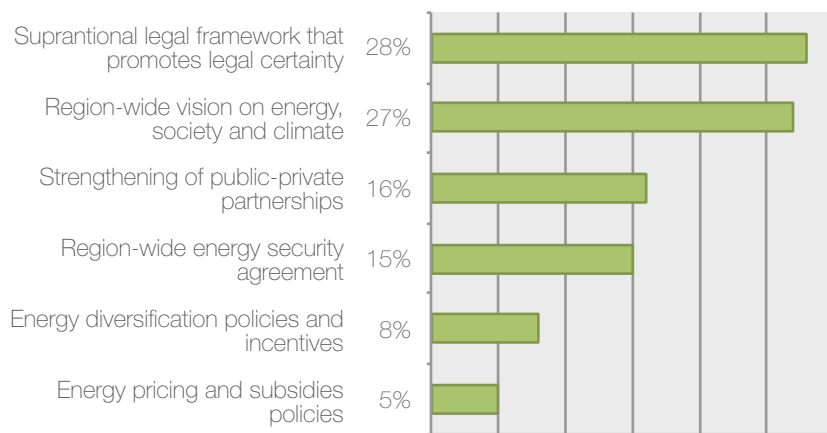
Where do you believe the industry should place its emphasis in developing environmentally friendly technologies?



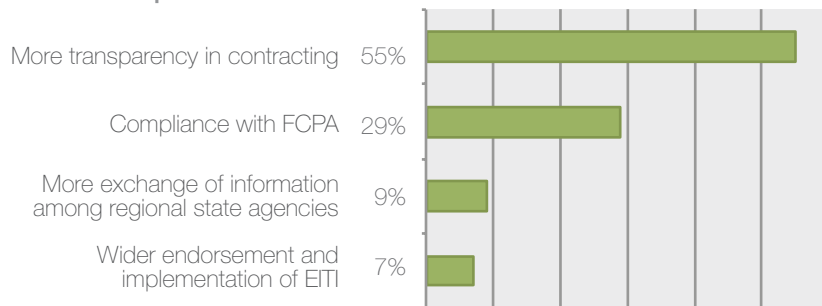
Totals may not add up 100% due to rounding

The lack of long-term policies and regulatory aspects would be the most important energy issues that the region faces today

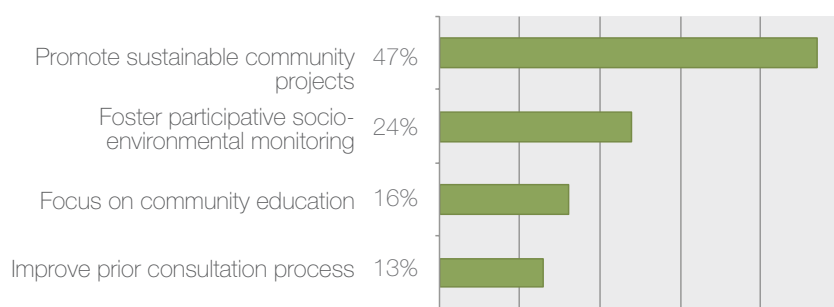
Which is the most critical aspect a Regional Energy Integration Agenda must include?



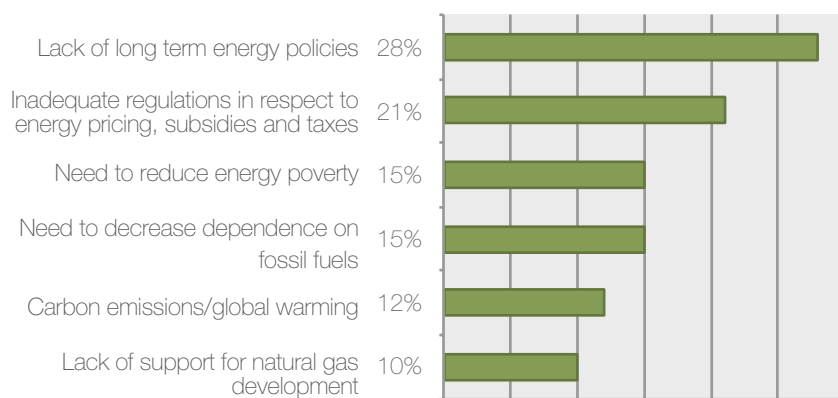
Which of the following measures can be taken for greater impact on corruption control?



Where should companies place their dominant focus to ensure a balanced development in environmentally sensitive areas with native people?



What do you think are the most important energy issues facing the region today?



Below are the results of the questions about some of the most relevant issues in the energy industry, such as regional integration, fight against corruption and socio-environmentally sensitive areas.

In regard to the regional energy integration, we can say that it would seem to be hampered by the lack of a common regional vision and the absence of a supranational legal framework promoting legal certainty.

In terms of fight against corruption, the surveyed attendees considered that the measure which would have greater success would be to increase transparency in recruitment, well above complying with standards or ratifying international agreements.

In relation to socio-environmentally sensitive areas, the surveyed attendees considered that promoting sustainable community projects would be the best approach to ensure a balanced development.

Finally, and as a general conclusion of the survey, regulatory aspects and achieving a long-term strategic vision to guide policies were identified as the major challenges that must be addressed today by the Latin American oil industry.



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About the organizer

A 48 years old association whose purpose is to promote industry integration, competitiveness and growth, while ensuring the sector maximizes its contribution to a sustainable energy development in Latin America and the Caribbean.

Regional headquartes

Javier de Viana 1018.
CP 11200, Montevideo, Uruguay
Phone: + (598) 2410 6993
info@arpel.org.uy | www.arpel.org



REGIONAL ASSOCIATION OF OIL, GAS AND BIOFUELS SECTOR COMPANIES
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