



CONFERENCE  
**ARPEL 2022** | 6<sup>th</sup>  
edition

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**Advancing the transformation  
of the region's oil and gas sector.**

Energy transitions and new risk dynamics

 **November 14 -16, 2022** | Westin Hotel | Lima, Peru

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Report



ASSOCIATION OF OIL, GAS AND  
RENEWABLE ENERGY COMPANIES  
OF LATIN AMERICA AND THE CARIBBEAN



EVENT REPORT

# Message from the Executive Secretary of ARPEL

ARPEL remains faithful to its mission of promoting the development and transformation of our sector in an era of energy transitions and new risk dynamics. That was precisely the motto of our successful Conference that was held in Lima from November 14th to 16th. We had some 460 registered professionals, including 60 speakers and 15 regional CEOs, four of which were women.

Among other activities prior to the inauguration, we had a diversity, inclusion and gender workshop, in which corporate policies and personal experiences were exchanged. Following the formal opening we had a fireside chat with legendary analyst, commentator and author Daniel Yergin, who shared his perspectives on global energy and the geopolitical impacts.

The next day we moved from the global to the regional, starting with the perspectives for the supply of hydrocarbons to support energy security, both from

the point of view of the operating companies and that of government agencies. Special attention was paid to gas as the natural fuel and accelerator of energy transitions. The challenges and opportunities of the refining segment were also analyzed, such as reconfiguration to improve efficiencies and to offer higher value-added products, the incorporation of biological sources into diets, and electric mobility. In both segments there was emphasis on the decarbonization of operations and on regional integration.

The last day was dedicated to sustainability from a holistic perspective: of the natural-social ecosystem, of our energy economies and not least, of our industry as such. We discussed issues on climate change, energy transitions, compliance, transparency, digitalization, cybersecurity, stakeholder engagement, and human talent. The crowning block was a series of three panels of CEOs who commented on the initiatives and transformative actions that their companies were undertaking.

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Some of the conclusions reached:

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There is no global recipe, nor is there a regional one. Each country must choose its path of energy transition adjusted to its situation of availability of resources, economic and social development.

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Transitions must then be “just”, and our governments have the right and the moral imperative to develop their resources in a sustainable manner, mitigating energy poverty as well as climate change. But that does not exempt us from the responsibility of combating a global phenomenon that also affects our coastal and insular areas.

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As a regional energy industry, we have a clear sense of urgency. We are embarked on the decarbonization of our operations and the diversification of our energy portfolios with the inclusion of renewable energies. Several of our member companies have declared net zero carbon goals and are incorporating wind and solar power, mining lithium, investigating the possibility of geothermal generation, producing blue or green hydrogen, and reforestation.

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However, there is no decarbonization scenario, no matter how aggressive or aspirational it may be, that excludes the significant participation of hydrocarbons in the energy matrix. We will continue to be an essential industry because we are experiencing a transition and not a replacement.

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In particular, concerns about energy security open a great opportunity for our region, which offers significant potential in Vaca Muerta in Argentina, the pre-salt in Brazil, and the equatorial margin in Guyana-Suriname. In addition, there is a remarkable abundance of potential resources offshore Argentina, Mexico, Colombia, Trinidad & Tobago and Venezuela, among others.

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At the intersection between energy security and energy transitions is natural gas, which provides a complementary, affordable, and reliable foundation to interruptible sources such as hydro, wind, and solar. Our technical skills are easily adaptable also to CCUS, geothermal, blue hydrogen and offshore wind.

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Our sustainability as an industry requires the decarbonization of our operations, the improvement of our environmental-social footprint, our financial capability and our reputation:



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Improving our external communication is key to maintaining or renewing our social license, giving sustainability to our business. It is also essential to attract and retain the new generations of professionals, technicians and administrators that will replace us.

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Such improved communication must be a cooperative effort. To that end, we are creating a Communications Committee to develop a clear, pragmatic, and reasonable narrative. We hope you will accept our imminent invitation to join this effort.

We have the capabilities to transform ourselves into an industry that continues to meet energy demand in a sustainable and cleaner way, an industry of which we can continue to be proud.



*Carlos A. Garibaldi*

**Carlos Garibaldi**

Executive Secretary of ARPEL





















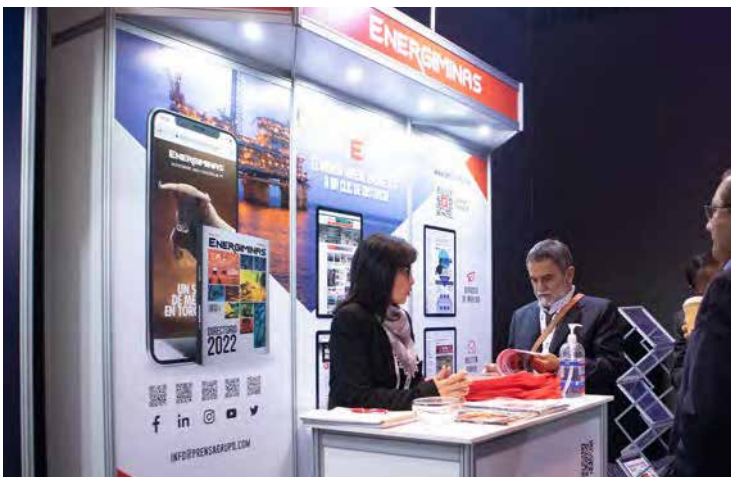




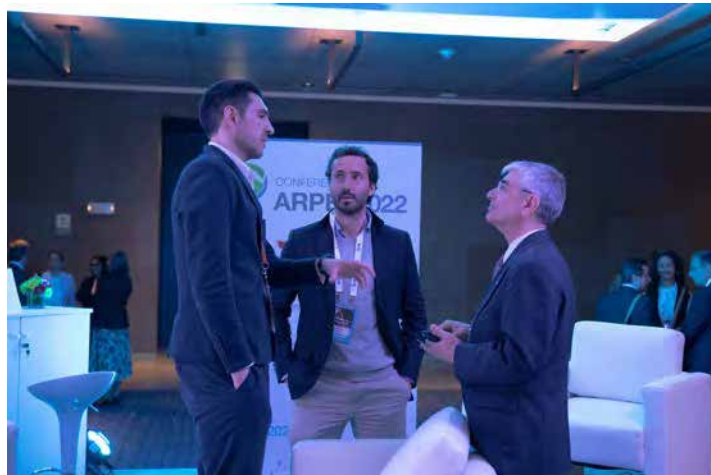




















# 1

## Energy transition, climate change and new risk dynamics

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In a world where 82% of energy production is based on fossil fuels, it is clear that the energy transition will not be possible without the decisive participation of the oil and gas industry. It is also clear that Latin America has a productive potential that can play a key role in the energy transition.

However, the road for the sector to continue to play a leading role is not smooth. Climate change, decarbonization of operations and the inevitable diversification of the energy portfolio towards renewable energy are the challenges posed by the transition.



The ARPEL 2022 Conference started with a Remarkable Talk. **Daniel Yergin, Vice-President of S&P Global**, was in charge of providing an overview of the current situation of the industry. A moment marked by a European recession, an armed conflict involving a major hydrocarbon producer, Russia, and a series of ambitious goals to limit global warming by the end of the century.

According to Yergin, this context has led to rethink the short-term energy outlook. While a year and a half ago we were talking about energy transition as an antithesis between fossil fuels and renewable energies, today, on the other hand, along with energy transition, we talk about energy security. A security that, according to the expert, would be impossible if oil and gas production is not maintained and

increased, because renewable energies alone cannot supply a planet that has surpassed the threshold of 8 billion inhabitants. “There is an ongoing re-evaluation forced by reality,” Yergin said.

“We are all talking about the energy transition as a fact. But is it easy to implement? Does it mean the same thing for all countries? How long will it really take?” asked **Carlos Garibaldi, Executive Secretary of ARPEL**, who moderated the conversation.

The Pulitzer Prize winner for “The Prize” answered by arguing that all energy transitions took more than a century and that they were, actually, energy additions. However, the transition that is intended to be undertaken now differs from the previous ones in that, in a reduced period of time, around 25 years, until 2050, it is intended to “change the energy foundations of a \$100 trillion world economy”, something that can be very complicated.



Carlos Garibaldi, Executive Secretary of ARPEL,



On the other hand, Yergin argues that the nature of this transition is also different, as it puts at stake the right of developing countries to take advantage of their hydrocarbon wealth. “That is certainly true in Latin America and Africa. So, I think the discussion on energy transition, so far, has been seen through the lens of a country with a per capita income that is 25 times the income of developing countries,” he said.

What would be Latin America’s role in the future with respect to energy security and the tension with the energy transition? Garibaldi asked.

For Yergin, the region definitely has significant potential. In addition to the presence of regular producers such as Brazil, Colombia, Ecuador and Argentina, there are now new players such as Guyana and its surprising offshore exploration success.

However, he was clear in emphasizing that, in order to attract more investment to the sector, stable sectoral policies and a rhetoric that gives certainty to those who risk capital to drive the development of the energy sector will be key.

“The discussion on energy transition, so far, has been seen through the lens of a country with a per capita income that is 25 times the income of developing countries”

**Daniel Yergin** | Vice President of S&P Global

## Climate change and the call to action

Global warming is the main factor driving the energy transition. Limiting this phenomenon to levels that do not exceed 1.5 or 2 degrees Celcius by the end of the century will imply substantial changes to the energy system over the next three decades.

**Thelma Krug, Vice-Chair of the Intergovernmental Panel on Climate Change (IPCC)**, was in charge of providing context during the panel entitled: “Call to Action: The Role of the Sector in the Energy Transition”.

Based on data generated in the Special Report published by the IPCC in 2018, Krug was adamant pointing out that unless there are rapid and deep reductions in CO2 and other greenhouse gas emissions, global warming will exceed 1.5 to 2 degrees Celsius during the 21st century.

While the global premise is to reduce greenhouse gases, the reality is that emissions continue to rise each year. According to the IPCC Mitigation Report





published in 2019, emissions were 12% higher than in 2010. Even more, the report concludes that atmospheric CO<sub>2</sub>, methane and nitrous oxide concentrations have risen to unprecedented levels in at least 800,000 years.

Additionally, the nationally determined contributions do not show a trend towards significant reductions in coal, oil and gas use by 2030, and fall far short of the immediate actions required to meet the Paris Agreement targets. This implies that the possibility of reducing the global consumption of hydrocarbons as a primary energy source, currently at 80%, is remote.

**Sophie Depraz, Deputy Executive Director of Ipieca,** agreed that greenhouse gas emission reduction rates are far from being on track, which implies the need to accelerate the pace and scale of actions.



Sophie Depraz, Deputy Executive Director of Ipieca

In this sense, the role of the sector is fundamental for the energy transition. However, such transition cannot be conceived as unique, as each country and each region has its own reality and pace to advance in that purpose. “We must look at the transition in collaboration with all sectors and from the angle of sustainable development,” he said.

The specific challenge for the industry is to reduce emissions in its own operations and the carbon intensity of the energy sold, in simple words, the decarbonization of the sector.

By way of example, **Silvina Oberti, Manager of Sustainability and Energy Transitions at YPF,** showed in figures what it means for her country, and by extension for the region, to try to underpin a transition in which developing countries have



Silvina Oberti, Manager of Sustainability and Energy Transitions at YPF

little impact on greenhouse gas emissions, thus ensuring that the energy transition is fair for all global players.

According to the executive, Argentina has a share of less than 1% of CO<sub>2</sub> equivalent emissions globally. Despite this minimal incidence, the country’s commitment to decarbonization is ambitious for 2030, a reduction of close to 40% in CO<sub>2</sub> emissions within its energy matrix.

“How do we make this transition happen in a way that allows it to be fair and inclusive for all? And this largely has to do with the possibility of reconciling the drive for the transformation of the energy system and the decarbonization of the economy, with secure and continuous access to energy for all”, she pointed out.





“Perhaps the most important challenge to advance in the role of hydrocarbons is to figure out how we manage to advance in transitions, allowing each of the countries to carry out, with the same final objective, the process of decarbonization that allows them to generate the greatest possible value.”

**Silvina Oberti** | Sustainability and Energy Transitions Manager, YPF

For Silvina Oberti, this implies three fundamental aspects: reducing energy poverty, which is a differential challenge for different countries; ensuring that countries and regions have access to financing in order to face the transition and, finally, that local contexts and the special characteristics of each country are taken into account with a view to the global objective of decarbonization.

“Therefore, perhaps the most important challenge to advance in the role of hydrocarbons is to figure out how we manage to advance in transitions, allowing each of the countries to carry out, with the same final objective, the process of decarbonization that allows them to generate the greatest possible value”.

**Vernon Paltoo, CEO of the National Energy Corporation of Trinidad and Tobago**, pointed out that his country is working in a comprehensive

manner, starting from the search for energy efficiency as a short-term measure, but with the premise that in the long term they will move to a green hydrogen economy.

“We are confident that we are on the right track to get us to where we need to be, in terms of the commitments within the Paris Agreement,” he said.

While there are several determining factors for accelerating the decarbonization of energy systems in the region, it was clear from the panel that the main one is to count on strong regulatory and policy frameworks.

In addition, business associations such as ARPEL play a key role in the sector’s energy transitions through technical and strategic cooperation and exchange, said panel moderator **Irene Alfaro, Managing Director of ARPEL**.



Vernon Paltoo, CEO of the National Energy Corporation of Trinidad and Tobago



Irene Alfaro, Managing Director of ARPEL



## The role of natural gas in the transition

“Natural gas is the energy by far the most consistent both with the purpose of accelerating the energy transition and meeting the social demands from our people and region,” expressed **Luz Stella Murgas Maya, President of Naturgas**, in the panel focused on the role of “Natural Gas in Latin America’s energy transition. Decarbonization, economic development, energy security and regional integration”.

What the Colombian executive said summarizes the feeling of the participants in the panel, that gas is definitely the fossil fuel with the greatest future in the energy transition.

However, they agreed that the transition must be fair and inclusive, implying that it should not deny the countries of the region the possibility of taking advantage of their hydrocarbon wealth, and it should guarantee their own energy security.

The benefits of gas are also clear. It is cheap, it has environmental attributes - which makes it key to the process of decarbonizing the economy - and is abundantly available in the region.

“It is important not to lose sight of the role that natural gas has played over the last 50 years and that it should definitely continue to play until 2050, as a clean fuel that helps a lot to bring about a clean energy transition,” says **Miguel Maal, General Manager of Promigas Peru**.

However, the region has not yet achieved an integrated gas market as in other latitudes. **Carlos Cortés Simón, Regional Coordinator for Latin America of the International Gas Union (IGU)**, gave an example, indicating that there are only small and isolated electricity or gas interconnections between Chile and Argentina, between Bolivia and Brazil or some in Central America. And, furthermore, these interconnections do not operate on a permanent basis, but rather relieve emergency situations or operate under a seasonal logic. “So, there is no gas market as such,” he said.



Miguel Maal, General Manager of Promigas Peru.



Luz Stella Murgas Maya, President of Naturgas



Carlos Cortés Simón, Regional Coordinator for Latin America of the International Gas Union (IGU)

“Energy transitions have to be mapped out at the pace of each country, addressing its own conditions, needs, opportunities and challenges.”

**Luz Stella Murgas Maya** | President of Naturgas



In addition, Cortés explained that, after Africa, the region is one of the poorest in terms of energy. Gas could be an important option to reduce such inequalities and ensure access to a quality energy source, but the figures say otherwise.

On the other hand, gas has a low penetration at the residential level in the region, with the exception of Colombia, where it has a penetration of 67%, followed by Argentina with 64%. The rest of the countries are far below. Peru has 14% penetration, while the others do not exceed 10%. This is a continental deficiency, but at the same time an opportunity for growth in the energy sector.

Despite this, Colombia has made significant progress in the use of natural gas. 100% of the natural gas consumed by households, industries, businesses and almost all thermal plants is produced in the country. Colombia does not export natural gas and only imports about 2% of the total demand to support the electricity generation of three plants that are located on its Atlantic coast.

“That is why exploration and production must continue, because the discoveries made 45 years ago in the Caribbean Sea, and 38 years ago in the interior of the country, made possible the construction of the systems that today allow us to bring gas to 36 million Colombians in their homes”, said Luz Stella Murgas of Naturgas.

In this context, the gaze permanently turns southward to observe what is happening with the Vaca Muerta field in Argentina. Its enormous volume of reserves and the developments achieved in the last few years make it possible to predict that the southern country could become an energy supplier for the region and the world.

“There is a very, very important opportunity to value Vaca Muerta gas to collaborate with this energy transition and, of course, to strongly help Argentina’s economic development”, said **Ricardo Ferreiro, President of Gas and Energy Business Development, Commercial of Tecpetrol.**



Ricardo Ferreiro, President of Gas and Energy Business Development, Commercial of Tecpetrol.





In that sense, Ferreiro believes that Vaca Muerta, with its estimated reserves located between 150 and 308 trillion cubic feet, may offer the opportunity to stimulate global decarbonization through liquefied petroleum gas as an alternative to the coal matrix. “Argentina today consumes 2 TCF per year. Therefore, there is abundant gas available to face not only regional exports but also liquefied gas projects”, said Tecpetrol’s representative.

In a pragmatic way, **Pablo Erias, Commercial Manager of TGN**, raises the possibility of Argentina exporting between 2 to 6 million cubic meters of gas per day outside the winter season, both to the Chilean and Brazilian markets through Bolivian pipelines. In addition, he considers that the development of large-scale LNG opens up an enormous possibility for his country, as it would imply doubling the production of the Neuquén basin in the next 10 to 15 years. “And the challenge at that point is to be able to articulate regulation, contextualization and financing. Decisions that are significant for the Argentine economy,” she said.

According to **Sylvie d’Apote, Executive Director of Natural Gas of the Brazilian Petroleum Institute (IBP)**, in her country natural gas has a lot of room to continue growing, since the use of the energy source barely reaches 12% of the total matrix. “It is necessary to make a creative effort so that gas can reach those places that are far away in a cheaper manner”, explained the panelist.

“In 2021, 48% of our energy matrix was already fully decarbonized. Much more if we talk about the electricity production matrix.”

**Sylvie d’Apote** | Executive Director of Natural Gas of the Brazilian Petroleum Institute (IBP).



Pablo Erias, Commercial Manager of TGN



Sylvie d’Apote, Executive Director of Natural Gas of the Brazilian Petroleum Institute (IBP)

On the other hand, the representative said that the biggest challenge for a country like Brazil, with significant oil and gas reserves, is to achieve a fair energy transition for a vast population. For Sylvie d’Apote, within this framework, there are many energy transition paths and many decarbonization options. Biofuels, green hydrogen, etc., which for now are in a zone of uncertainty as to which ones will finally prevail.

“From Brazil’s point of view, we are now a country with a very favorable context for the transition,” said the IBP director, “particularly because the country has an energy matrix that is practically 50% already renewable and is based on hydroelectricity, biomass, solar and wind power. In addition, there is an oil and gas production sector with a fairly low carbon intensity and below the world average.







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## Latin America: a potential key player in the global energy transformation

The progress, results and future plans of the oil and gas industry in Brazil, Argentina, Colombia, Guyana and Suriname position Latin America as a potential key player in a global energy transformation marked by climate change mitigation and the need to meet the growing demand of accessible, safe and sustainable energy.

Latin America already has an energy matrix with a high percentage of renewable energies, and has both the right and the obligation to develop its hydrocarbon resources to deal with the economic and energy poverty.

To do this, several aspects must be considered, from implementing more efficient processes in environmental licensing regulations to addressing mechanisms associated to the energy transition such as the development of natural gas markets and social aspects.

**ARPEL's Executive Secretary Carlos Garibaldi** was in charge of moderating the lecture given by **Schreiner Parker, Senior Vice-President and Latin America Manager at Rystad Energy** to analyze "The New Business Scenario for Exploration and Production in Latin America and the Caribbean."

This scenario is immersed in a reality that indicates that, contrary to common beliefs, the world needs more oil and gas. "As we look at 2030, 2040 and 2050, there is a call for new barrels to be in the



Carlos Garibaldi, Executive Secretary of ARPEL

market”, Schreiner said and estimated that through the end of the decade, an additional 63 million barrels per day are needed to meet demand, which may be satisfied by a mix of different sources from OPEP Plus and non-OPEP producers, with shales and deep-water production playing a critical role in the future.

“The real message here is that regardless of what we see on the media, we are still in a situation where we need to explore and find new sources of oil to meet our immediate-term needs”, the expert remarked.

Regarding Latin America, the Rystad Energy executive focused on exploration, an area that was significantly reduced in 2019 and 2020 but

that experienced a recovery between 2021 and 2022. The leading player has been Guyana, which has enjoyed an unprecedented success in exploration, since it moved from zero recoverable reserves to over 11,000 million barrels in less than ten years.

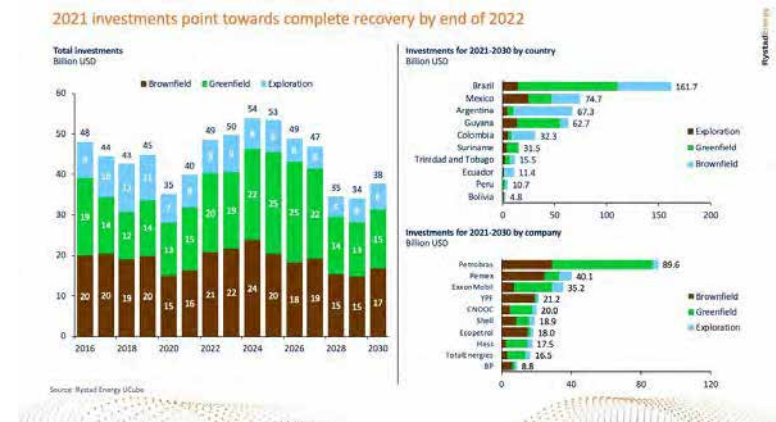
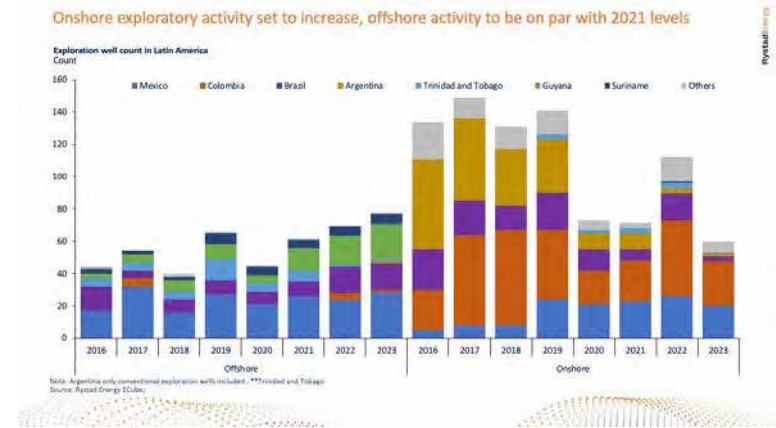
In addition, countries such as Brazil and Mexico have also made new discoveries, generating a correlation in the volume of regional exploratory investments, since, from a low of USD 28 billion in 2020, it is estimated that investments could reach USD 46 billion by 2025.



Schreiner Parker, Senior Vice-President and Latin America Manager at Rystad Energy

“The real message here is that regardless of what we see on the media, we are still in a situation where we need to explore and find new sources of oil to meet our immediate-term needs.”

**Schreiner Parker** | President and Latin America Manager at Rystad Energy.





## Offshore and onshore in the region

Once again, Guyana, Brazil and Mexico set an example. According to Rystad, ExxonMobil is not short of drilling prospects in its Guyana star block and this pace will continue during the next years.

In Brazil, there was limited exploration in the 2017-2021 period, but with the new presidential election the exploration will continue, led by Petrobras and its international partners.

Mexico also stands out. Offshore exploration efforts are under way, with certain committed wells to be drilled according to the licenses granted during the original opening.

Regarding onshore wells, Argentina is a key player due to its efforts and performance regarding unconventional fields. Colombia has kept its exploration pace and the activity is expected to continue.

How does this affect investments in the sector?  
“There is definitely a recovery in total investment, to the extent that by 2024 we are expecting a maximum total investment of USD 54 billion, between brownfield, greenfield and exploration”, Schreiner explained.

Regarding this total investment, a significant data is that the offshore investment compound annual growth rate (CAGR) amounts to 17% in the 2020-2025 period. “This is significant in the global context, because it is an extremely high figure”, the expert explained.

“Then, shale/tight oil also shows a relevant performance, with a 7% CAGR, meaning that offshore has really matured and that investments in this area will significantly increase in the coming years”, he added.

In addition, deep waters are a very advantageous source of supply when it comes to reducing emissions. In fact, they are equivalent to half the world average, estimated in 18 kg CO<sub>2</sub> per barrel of oil equivalent.

“So Offshore Latin America is well positioned when it comes to becoming a long-term supplier to the global market, because it meets two necessary and sufficient conditions. One of them is the low break-even point and the second one is that low emissions intensity”, Schreiner concluded.







## Natural gas on stage

Understanding that fossil energy is critical to energy transition, the question is how Latin America will grow its international natural gas market share. Finding the answer was one of the tasks undertaken by the panel called “Global Crisis and Regional Opportunities”, moderated by **Felipe Cantuarias, President of Sociedad Peruana de Hidrocarburos (SPH)** and which started with an analysis made by **Rafik Amara, Senior Analyst of the GECF (Gas Exporting Countries Forum) Gas Market.**

As expected, natural gas consumption worldwide has not stopped growing in the last years. The economic recovery and weather conditions (cold Winter and warm Summer) have allowed an upward trend, particularly in the USA, where it is supported by the power generation sector.

Consequently, the global growth of gas production has also been continuous, with an average pace of 2% annually between 2010 and 2020. In the oil and gas industry, this has translated into an investment volume of USD 673 billion, of which just 6% corresponds to Latin America – one of the lowest investments globally.

Yet, Rafik Amara believes that Latin America and the Caribbean are already involved in the natural gas market in different ways. Trinidad & Tobago and Peru are the only LNG exporters in the region, representing around 3% of global LNG exports.

The go-live of new upstream gas projects in Trinidad & Tobago is expected to drive LNG exports to the global market in the short and medium-term.

In turn, Guyana and Suriname might also support LNG exports, just like Argentina, which has the potential to develop Liquefied Natural Gas export facilities.

In Mexico, the Costa Azul LNG plant, located on the Pacific coast, will allow exports to Asian customers. Additionally, the Aztec country is planning to use pipelines to reach intra-regional markets such as Honduras, thus increasing natural gas penetration in Central America.

Regarding South America, with the increased production in Argentina, the pipeline network would enhance interconnectivity between the North and South of the country and, eventually, increase the country’s export capacity to other South American countries.

As **Verlier Quan-Vie – Business Vice-President of NGC Trinidad y Tobago** explained: “Natural gas is a critical element for the economy of Trinidad & Tobago.”



Felipe Cantuarias, President of Sociedad Peruana de Hidrocarburos (SPH)



Rafik Amara, Senior Analyst of the GECF (Gas Exporting Countries Forum) Gas Market.

According to the senior executive, based on the use of gas, her country has managed to develop a petrochemical industry and established a GTL plant. “Gas is critical for power generation, and so we have moved to LNG production. Thus, we have a balanced economy with petrochemical production, LNG production and even a portfolio of industrial and commercial clients”, she remarked.

In turn, **María Aybar, Vice-President and CEO of Perú LNG** said that one of the key requirements for the region to continue with its penetration in the global gas market definitely involves attracting investment because: “we are saying that natural gas is the fuel of the energy transition”, she stated.

But now, with Vaca Muerta, what is Argentina’s potential to export natural gas? This was the

question that Felipe Cantuarias asked **Patricio da Ré, Executive Manager of Strategic Planning, Business Development and Shared Management at YPF**. For the executive, the first impact will be seen within the Argentine territory itself and will result in a substitution of imports both from Bolivia and LNG. In addition, he considers that the industrialization of gas and petrochemicals can be stimulated.

With a more regional vision, Patricio da Ré considers that we may speak about energy integration allowing South America to use natural gas as the power that fosters regional competitiveness. “I am convinced that this is the area where we need to work harder and be more creative. What’s more, the Southern Cone is quite integrated with infrastructure, power grids and gas pipes”, he added.



Verlier Quan-Vie, Business Vice-President of NGC Trinidad y Tobago



María Aybar, Vice-President and CEO of Perú LNG



Patricio da Ré, Executive Manager of Strategic Planning, Business Development and Shared Management at YPF



## Promotion of investment in exploration and production

Clearly, fossil fuels will still have an important participation in the region's energy matrix in the short, medium and even long-term, according to **Medardo Cadena, Director of Research, Projects and Information of the Latin American Energy Organization (Organización Latinoamericana de Energía, OLADE).**

"This is because the future of energy will go hand in hand with gas and oil", added **Marta Vieira Abrao, General Manager of Exploration Application and Data Technologies for Petrobras,** and **Rodolfo Henrique de Saboia, CEO of Brazil's ANP** replied: "We can't afford to live without fossil fuels because they will still be important to the energy matrix in the years to come."

In this regard, the ARPEL 2022 Conference included a panel of companies and a panel of hydrocarbon agencies to evaluate the opportunities and challenges for investment in exploration and production, as well as the need to promote exploration in a context of energy transitions.

**GeoPark Director Carlos Macellari** was the first person to speak at the companies panel, where he depicted the current scenario, with more mature basins, a growing social pressure toward decarbonization, uncertainty about future demand, changes in laws and regulations with a higher compliance cost, a difficulty to access funding, the big industry players (mainly European) moving to become integrated power players and a difficulty to attract new talent in an industry that has "bad press".

Macellari highlighted his company's performance as an independent player that achieved exploration success in a context such as the Latin American one. To do this, the three pillars on which this success was built were excellence in exploration, technical excellence for production and, finally, the commitment to the environment and their communities. "Most of our activities have shown a compound growth rate of 16% from 2009 to 2021", he explained.

"Latin America is the greenest region in the planet."

**Medardo Cadena** | Director of Research, Projects and Information of OLADE.

"This is because the future of energy will go hand in hand with gas and oil."

**Marta Vieira Abrao** | General Manager of Exploration Application and Data Technologies for Petrobras



Medardo Cadena, Director of Research, Projects and Information of the Latin American Energy Organization (Organización Latinoamericana de Energía, OLADE).



Marta Vieira Abrao, General Manager of Exploration Application and Data Technologies for Petrobras



Rodolfo Henrique de Saboia, CEO of Brazil's ANP

“We can’t afford to live without fossil fuels because they will still be important to the energy matrix in the years to come.”

**Rodolfo Henrique de Saboia** | CEO of Brazil’s ANP.



Carlos Macellari , GeoPark Director



Horacio Marín, Head of Exploration and Production for Tecpetrol,

When we refer to exploration in the region, we always end up talking of Vaca Muerta. In this regard, **Horacio Marín, Head of Exploration and Production for Tecpetrol**, remembered the experience of his company in the development of the Fortín de Piedra project, which started in 2017 in a 240-square-kilometer area and which “was considered as a near-impossible project”.

In 2017, when the company took over the area, there was no infrastructure available. USD 2,200 million were invested between 2017 and 2018, 900 million of which were allocated to infrastructure. They had to build plants and oil pipes, close gas pipes and approach the project with seven parallel drilling teams and two fracturing teams.

“Today, this area of Fortín de Piedra produces 20 million cubic meters of gas every day, the equivalent to half the gas production in Bolivia. “If we had enough market, this area could duplicate. Fortín de Piedra was the area with the highest production in the Republic of Argentina”, Marín said.





**YPF Exploration Manager Fernanda Raggio** also mentioned Vaca Muerta as the formation that impacts both Argentina's exploration and the country's economy itself.

According to the executive, the journey made since 2009 has generated a lot of learnings and the possibility to see a five-fold increase in oil production and a three-fold increase in gas production over the next years.

In addition, YPF has pinned its hopes on exploring offshore, in an area where the company has 600,000 square kilometers of prospects and there are first-line companies to explore all the Atlantic coast.

To the north, Colombia is one of the most outstanding cases in the region. **Elsa Jaimes, Vice-President of Exploration at Ecopetrol**, reviewed the last exploratory progress made by her company, which drilled 13 wells in 2020, currently has 7 wells in the drilling phase and has already achieved 6 discoveries. "This is a successful year for exploration at Ecopetrol and Colombia", she said.

Moreover, offshore is another area where Ecopetrol works hard. "Overall, we have ten blocks in the Colombian Caribbean", she explained, which, since 2014, could mean a potential of 11 million cubic feet. "This opens a very important door to exploration and production, mainly of gas, which is the energy source that supports us in the energy transition", she added.

Because the energy transition or transitions definitely pose a series of challenges to the companies, in a good way, such as how to decarbonize operations. Elsa Jaimes's goal is that her company achieves zero carbon emissions by 2050, with a business model that is diversified between hydrocarbon and renewable energies.

In this regard, the panel members believe that Latin America has shown a deep commitment to decarbonization and climate change mitigation, since one third of its energy matrix comes from renewable sources and the greenhouse gas emissions in the area barely amount to 8% of the global total. "Latin America is the greenest region in the planet", Medardo Cadenas remarked.

"We are speaking about a region that has started a journey or several journeys of energy transition. But it is a region with lots of social debts, and a region with a long way to go to achieve growth and development, which, in energy terms, means that demand will grow", OLADE's representative pointed out.



Fernanda Raggio, YPF Exploration Manager



Elsa Jaimes, Vice-President of Exploration at Ecopetrol

**Annand Jagesar, Staatsolie CEO**, considers that the developed world has deeply benefited from hydrocarbons and should give other countries the possibility to use these resources. “To fight climate change, we need energy security, and we will not have energy security without hydrocarbons. As a continent, we also deserve this energy security”, he remarked.

**Armando Zamora, former President of Colombian ANH** thinks that the mission of hydrocarbon agencies is to turn hydrocarbon exploration into an attractive and sustainable activity in a very confusing and competitive international context, with restrictions to excess capital for the oil and gas industry.

“To this end, many countries aim at having regulatory approaches that guarantee that their investment includes the development of hydrocarbon resources, turning them into reserves to maintain a level of supply that leverages social and economic development before it is too late”, summarized **Miguel Moyano, CEO of ARPEL**, who moderated the agency panel together with Zamora.

In turn, **Perupetro CEO Daniel Hokama** noted that: “As always, it is essential that the authorities of the countries fully understand that the tax and legal frameworks and contract terms must be predictable and stable to foster upstream investment in a moment when the oil and gas industries are strongly questioned.

“To fight climate change, we need energy security, and we will not have energy security without hydrocarbons.”

**Annand Jagesar** | Annand Jagesar, Staatsolie CEO.



Annand Jagesar, Staatsolie CEO



Armando Zamora, former President of Colombian ANH



Miguel Moyano, CEO of ARPEL



Daniel Hokama, Perupetro CEO





# 3 Sustainability: the new mark in the sector agenda

**Begoña Mundó, Vice-President and Executive Director of Tema Litoclean Group**, opened the panel called “Integrating Sustainability to Corporate Management. How are companies making progress on this?” as its moderator by saying: “I like this definition for sustainable development: That which meets current people needs without compromising the potential of future generations.

Starting the third day of ARPEL 2022 Conference, sustainability was the center of an important discussion space involving senior executives of companies in the sector, as well as representatives from entities specialized in this subject matter, who discussed the industry contribution to sustainable development.

According to the moderator, speaking about sustainability involves three basic elements – environmental, social and governance. In this context, the hydrocarbon industry faces the great opportunity of substantially contributing to the achievement of the 17 Sustainable Development Goals (SDG), to meet the 2030 Agenda proposed by the United Nations.

Desarrollo sostenible



### ¿Que entendemos por Desarrollo sostenible?

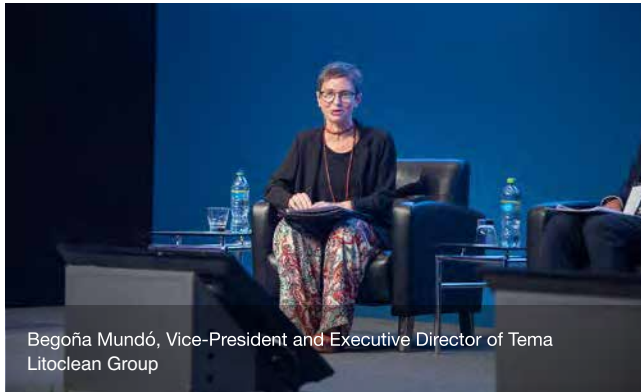
Aquel que satisface las necesidades actuales de las personas sin comprometer la capacidad de las futuras generaciones.

Engloba tres elementos fundamentales que deben complementarse en armonía:

- Ambiental.
- Gobernanza.
- Social.







Begoña Mundó, Vice-President and Executive Director of Tema Litoclean Group

All this in a context that places companies before a society that demands a radical change in the organizations' governance while expressing their expectation to have sustainable development added to their management agenda.

This feeling is shared by other stakeholders such as investors, who currently prioritize greener and less contaminating sectors for their capital placements. At present, this conditions the possibility for the sector to capture investment to becoming more environmentally friendly and aligning with the goals of reduced greenhouse gas emissions.

Moreover, sustainability has become a critical topic, even for talent hunting, since new generations seek to develop in sectors that guarantee environmental protection and are socially responsible.

“Companies need to know that unless they incorporate sustainability to their corporate management, they will have a problem with their



Bruno Valdez, President of the SNMPE's Hydrocarbon Environmental, Social and Security Matters Committee

brand reputation. We must transform our companies to seek business models that have a triple positive impact: economic, social and environmental”, the moderator added.

And what are the companies or organizations in the sector doing? Based on the experiences of Pluspetrol, Ecopetrol, Petrobras, GeoPark and the National Society of Mining, Oil and Energy (SNMPE), the common denominator is that sustainability is already part of their strategic agendas and that it is basically anchored to their compliance with the SDGs proposed by the United Nations.

**Bruno Valdez, President of the SNMPE's Hydrocarbon Environmental, Social and Security Matters Committee**, explained so by stating that 70% of the companies they represent are associated to Sustainable Development Goals.

In addition, corporate strategies are starting to include sustainability as a critical element that



Mónica Tangarife, Senior Professional of Corporate Matters at Colombian Ecopetrol



involves the improvement of operating efficiency, environmental protection, human rights, retention of new talent, financial discipline and, above all, transparency in all processes.

**Mónica Tangarife, Senior Professional of Corporate Matters at Colombian Ecopetrol** explained: “Considering the size that the company has at present, we have been working on the development of a long-term strategy called Transforming Energy, through to 2040”. One of the four drivers of this strategy is sustainable value generation in the social, environmental and governance areas.

**Sandra Martínez, Corporate Social Responsibility Manager for Pluspetrol**, said: “In particular, we have worked with a group of collaborators throughout the year to add sustainability to the organization’s purpose.” In this way, the Company has achieved the Senior Management commitment of taking sustainability to such a level of significance that it is included in the very definition of the company business.

In turn, **María Elvira Calero Leyva, Human Rights Specialist for GeoPark**, contributed to the discussion with the due diligence approach to Human Rights as a critical factor when it comes to dealing with sustainability.

According to the specialist, there are four reasons to approach this topic. The first one is because the countries where the companies operate are already demanding that, although perhaps without supporting legislation. The second reason is that clients also demand it. The third one is because it allows operating with social license and with the trust of communities and government agencies at both the local and national levels. And the fourth reason is that investors also need to report this new diligence in human rights.

“This is actually something that saves us trouble, generates trust, and helps us mitigate the reputational impact as well as potential judicial impacts. It is not an option”, Calero stated.

It is generally agreed that including sustainability in the sector agenda is no longer an option but a clear need to acquire the social license that allows the companies to operate. This same feeling was ratified in the second panel, called “Sustainability, Transparency and Compliance. Promoting



Sandra Martínez, Corporate Social Responsibility Manager for Pluspetrol



María Elvira Calero Leyva, Human Rights Specialist for GeoPark



Pedro Miras, President of the World Petroleum Council (WPC)



Brian Sullivan, Executive Director for Ipieca

Transformation in an Age of Higher Expectations from Stakeholders”, which was chaired by **Alexa Burr, VP, Standards & Segment Services, Global Industry Services, American Petroleum Institute (API)**.

**Pedro Miras, President of the World Petroleum Council (WPC)** emphasized that: “If we are not the best regarding the environmental, social and governance (ESG) criteria, society will take us out of the market. Then, we must act, be proactive and show the society what we are doing”, he said.

And **Brian Sullivan, Executive Director for Ipieca**, a worldwide nonprofit association devoted to environmental and social matters in the oil and gas industry, added that “in many senses, SDGs are a list of unmet needs throughout the world that are framed in a very useful way and that confirms that, as an industry, we need to align our actions and our impacts and to show how we do it.”







Dante Pesce, Executive Director of the Centro Vincular of the Pontificia Universidad Católica de Valparaíso (PUCV)

“The best company is not the one that does many good or nice things, but the one that best understands its challenges and is able to show them to the public, with goals, with processes and a commitment to improving in the medium and long term. That is the best company, the one that has the best understanding of where it is not so good and where there is room for improvement.”

**Dante Pesce** | Executive Director of the Centro Vincular (PUCV)

In this sense, the oil and gas industry has an impact on certain SDGs including, but not limited to, Decent Work, Climate and Accessible Energy, but it still has the pending task of communicating its role in these areas to society, which ultimately gives legitimacy to its operations.

**Dante Pesce, Executive Director of the Centro Vincular of the Pontificia Universidad Católica de Valparaíso (PUCV)**, believes that without a social license to operate, companies are doomed to litigation and to having their projects halted, particularly those with a high extraction impact. “Trust is earned and needs to be maintained”, the expert said.

In this context, the panel members believe that there are two critical points to deal with the question of sustainability. The first one is stakeholder

engagement, to prioritize listening to those stakeholders that might have a different view, which will take certain topics to the senior management, thus allowing the mapping of new risks to be prevented and eventually mitigated.

The second point is linked to the size of the companies, which conditions their responsiveness to these stakeholders. In Pesce’s opinion, this should not refrain the companies from having their own particular approach in a transparent and comprehensive manner.

“We must consider the social license as a business topic, which is really what it is. If we don’t realize what it means to our operations, we will have a lot of difficulties in the future, because we will not be able to integrate it to the organizations”, Miras, from WPC, explained.



Maria Archimbal, Compliance Director for YPF

“And here, communication is basic, being able to understand who is watching us, what explanation stakeholder needs and how it should be given. As a company, it may be communicated in the most transparent manner”, Pesce added.

**Maria Archimbal, Compliance Director for YPF**, recommends that this communication should be as accurate as possible, as well as clear and related to what the stakeholder expects or wishes to understand about the Company projects or actions.



Regarding transparency and communication, there is a key aspect: the standards. Pedro Miras explains that certain institutions have shown a great progress in generating common measuring standards for all these matters because otherwise, each company will try to show the portion they consider to be best. “So, in order to be transparent, we need to talk about the same things and to be able to measure similar things. Otherwise, transparency is hardly applicable”, he pointed out.

The sector needs to reach the number of 63 million oil barrels a day by 2030. To do this, sustainability must be considered in its widest sense, suggested Ipieca's Executive Director Brian Sullivan. “If we do this, then accessing the investment that will probably be required to close this supply gap should be easier. By applying good practices and communicating them later, it will become a more attractive investment to the investors' community.



Alexa Burr, VP, Standards & Segment Services, Global Industry Services, American Petroleum Institute (API)



“These topics must start to be relevant to the company, starting by the senior management to end up being part of the corporate culture”

**Maria Archimbal** | Compliance Director for YPF



# 4

## Diversity, inclusion and gender in the O&G industry

Around 40% of ARPEL 2022 Conference panel members were executive women who, throughout the three days, showed why they hold senior positions in an industry that is traditionally linked to men. Thus, gender inclusion was part of the DNA of the sector event.

Moderated by **Pablo Ferragut, Managing Director at ARPEL**, the three-session workshop on Diversity, Inclusion and Gender in the O&G Industry gathered **Bruno Mourao (Boston Consulting Group), Pedro Miras (WPC), Sherry Goldberg (International Finance Corporation), Elizabeth Rodríguez**

**(Woman in Energy), Nahil Hirsh, Chair of the SNMPE's Working Group on Diversity and Inclusion, Florencia Tiscornia (YPF), Elsa Jaimes (Ecopetrol), Elva Ruiz (SLB), María Julia Aybar (Perú LNG) and Arlene Chow (Heritage).**



Pablo Ferragut, Managing Director at ARPEL



The definition provided by Miras during the analysis was clear and concrete: “It is critical for senior management to understand that this is a value topic for companies”. Therefore, in a context where challenges involve energy transition, decarbonization of operations and search for sustainability, we cannot avoid analyzing diversity and gender inclusion as an integral part of the sector transformation.

Although significant advances have been made in policies and programs, the progress of oil & gas companies with D&I results has stagnated and women representation remains unchanged. In this regard, the workshop showed that there is still a gap that demands the promotion of gender equity in an industry where women hold only 22% of working positions.

Moreover, women representation is still low in senior positions. The percentage of women in high-level decision-making positions is half that of women in mid-level positions, particularly in commercial and administrative roles (where figures fell from

26% in 2017 to 13% in 2020). This pattern is observed throughout the regions and is consistent with the 2017 findings, indicates the study named “Unexploited Reserves 2.0. Driving Gender Balance in Oil & Gas”, promoted by BCG and WPC.

“If the industry wants to capture and retain the talent required to respond to the energy transition and other industry changes and challenges, it must clearly focus on improving diversity and inclusion”, said Bruno Mourao from Boston Consulting Group (BCG), who presented the conclusions of the study.

Therefore, companies urgently need to adopt measures that promote diversity among their employees, understood as a strategic priority in a new low-carbon world that demands continuous innovation.

According to Mourao, the analysis showed that the companies with greater diversity outperform other companies both in innovating and in attracting and retaining more diverse talent.



Bruno Mourao (Boston Consulting Group)



Pedro Miras (WPC)



Nahil Hirsh, Chair of the SNMPE's Working Group on Diversity and Inclusion



Elizabeth Rodríguez (Woman in Energy)

In the expert's opinion, this is why we can begin to be hopeful, because the number of D&I policies and programs adopted by companies has increased around 50% since 2017, showing that although results have stalled, mainly since the COVID-19 pandemic, the commitment to act and set the grounds for future progress has strengthened in the same period.

In fact, around 67% of the companies surveyed already have a D&I dedicated team, which means a 28% increase from the 2017 measure. Similarly, 74% of the companies already follow up relevant D&I Key Performance Indicators (KPIs), compared to 40% in 2017.

The most active industry approach has shown positive outcomes in important areas. Although the overall female representation in the industry has remained stable, the percentage of women in global companies (operating in several countries)

has increased slightly from 24% to 25%, and the percentage of women in global companies that join the industry as university graduates has also increased slightly, from 26% to 28%, the report adds.

In turn, the female executives who took part in the second panel shared their experience in working in the industry, which revolved around the question: What are oil and gas companies doing to promote gender equity? The panel was moderated by Florencia Tiscornia, VP People and Culture at YPF.

In the last session, Sherry Goldberg, Gender & Community Development Consultant, Sustainable Infrastructure Advisory from International Finance Corporation (IFC), lectured on "Discovering Opportunities for Women and Companies: A Toolkit of Actions and Strategies for Oil, Gas and Mining Companies."



Florencia Tiscornia (YPF)



Elsa Jaimes (Ecopetrol)



In particular, the IFC executive remarked that a growing number of companies in the oil, gas and mining sectors have undertaken to make these industries more diverse, gender-balanced and inclusive, because they understand that this is not only the right thing to do but also makes sense at the business level.

In this regard, IFC has developed a toolkit to help oil, gas and mining companies meet their gender goals. This toolkit initially provides a detailed explanation of the economic benefits of gender diversity and inclusion, and later offers practical and in-depth tools to help companies assess and deal with the

barriers to equality and inclusion in the workplace, throughout the supply chain and in developing investment and community relations.

“These toolkits can be used individually by different departments or business units or may be combined as part of a broader corporate strategy, based on the priorities set”, IFC states.



Elva Ruiz (SLB)



Arlene Chow (Heritage)



Maria Julia Aybar (Perú LNG)





# 5

## Talent and digital transformation for the industry of tomorrow

Attracting and building loyalty from human resources has always been relevant for the industry, but during the post-pandemic era, it has become increasingly challenging, particularly because of the many changing paradigms on what it means to work, belong to an organization and connect to our company's purpose as well as to our individual purpose.

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“In hydrocarbon production companies, we will have a difficult task in attracting and retaining talent, because at present, there are young workers whose perspective and vision focus on digital transformation and innovation. And it is there where we need to develop this perspective”, said **Fernando Cruz, Head of Organizational Design & Development at Petroperú**, when he opened the panel called “Developing Talent for the Industry of

the Future: Digitalization, Diversity, Sustainability and the New Generations.”

Thus, the companies in the industry are challenged to work hard on their value proposal. “In our case, this value proposal basically means being able to define what working for YPF means, and what belonging to YPF means for any individual”, **Florencia Tiscornia, VP for People & Culture at YPF** said.



Fernando Cruz, Head of Organizational Design & Development at Petroperú



Florescia Tiscornia, People & Culture VP at YPF



Institutional Relations and Human Talent Manager for the Ecuadorian

In this journey, the company has understood that links with leaders, process agility, wellbeing and the collaborative relation among the teams and different businesses are some of the attributes that start to gain relevance for people and for what the organization needs to meet its challenges with people who are proud to belong and committed to the company's goal.

Therefore, one of YPF's evolutions has been how they moved from the traditional concept of benefits

to a concept of wellbeing, and from seeing people as resources to considering them as comprehensive beings, paying attention to their social, emotional, physical and financial aspects to allow them to reach their full potential within the Company.

Another key aspect of the value proposal is the development of skills –an important asset to respond to the business needs. YPF understood that it had to be done differently, so it continued with the development of its specialists' technical skills, i.e.,

the expertise that all companies need to conduct safe, efficient and sustainable operations. But, within the organization, it also started to promote more portable skills related to agility, the digital, project management and change management, all of which will allow the company to develop its culture in this new post-pandemic stage.

OCP Ecuador is undergoing a different moment, which demands a reformulation of its values, considering the concepts of innovation and agility. According to **Esteban Silva, Institutional Relations and Human Talent Manager for the Ecuadorian firm**, the company seeks consistency among all the things proposed and needs the goals to be acted on firmly and not just to remain on paper.

“Working on this connection between the company purpose and the individual purpose is one of the great challenges YPF faces. In particular, this is translated into working hard on the company culture, which makes our everyday behaviors and habits consistent.”

**Florescia Tiscornia** | People & Culture VP at YPF



**Michelle Unger, Global Leader of the Training Systems and Services Business Line of Rosen Group** believes that all of us want and seek the same. On the one hand, employers seek to provide spaces for professionals to develop so that they become part of the company, and employees wish to develop their own careers successfully.

According to specialists, some years ago, professional success was defined as developing competencies, being promoted and reaching the age of retirement in the same company. Working for a company for 20 years was considered as a successful career. Now, this definition has changed.

“Many professionals, particularly very young ones, are still trying to find a direction, and if they do not get these development opportunities in the company, they just leave. It is neither the salary, nor the flexibility or the benefits they might have - it is the opportunity to develop and have a successful professional career”, the executive added.

A transformation process is quite complex, but the industry is showing signs that change is needed. In this context, **Roberto Andrade, Deputy Manager of Business Transformation for EP Petroecuador** remarked that EP Petroecuador has undergone a transformation process since 2019 “and the hardest thing to do is to unlearn.”



Michelle Unger, Global Leader of the Training Systems and Services Business Line of Rosen Group



Roberto Andrade, Deputy Manager of Business Transformation for EP Petroecuador

“The company has people who have worked more than 30 or 40 years and do not want to unlearn in order to relearn. This poses challenges, restraints to the generation of paradigms. Therefore, to mitigate this, the firm has been working on creating a purpose for its workers, allowing them to achieve self-motivation and generate the self-leadership required to feel like change managers”, he explained.

Another important topic involves generating technology skills, reducing the digital gap within the organization.

“It is neither the salary, nor the flexibility or the benefits that new talents might have - it is the opportunity to develop and have a successful professional career.”

**Michelle Unger** | Global Leader of the Training Systems and Services Business Line of Rosen Group

However, Petroecuador is trying to streamline and eliminate what does not add value to the organization, to later design new job profiles that do not generate the restraint of working in a position without being able to move to another one, but rather move toward polyfunctionality. “Allow people to move freely within the structure pursuant to certain conditions and company policies. We are on that track”, Andrade said.

On the other hand, the panel members agreed that the purposes of companies often do not attract,

build loyalty in, retain or lure collaborators because they cannot connect to the purposes of the people that form part of the different companies and the whole ecosystem, i.e., employees, clients, suppliers, contractors and shareholders.

“Working on this connection between the company purpose and the individual purpose is one of the great challenges YPF faces. In particular, this is translated into working hard on the company culture, which makes our everyday behaviors and habits consistent”, Florencia Tiscornia remarked.

According to Michelle Unger, the industry should offer a professional career and not a job. Moreover, we must not forget that 50% of the talent present corresponds to women.

The sector needs to have professional teams with a high array of professional, technical and social skills. However, for the industry to be more attractive, companies must implement or generate leadership mechanisms, add new practices, become less bureaucratic and achieve a better diversity climate.

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## Digital transformation, reconfiguring the industry and society

Just like talent development is a core element in the agenda, so is digital transformation. A transformation is always fast and covers almost all human activities. However, unlike in other industries, experts believe that the digital transformation in the oil and gas sector must consider that, in the short- and medium-term, nothing will replace oil, so disruption will take place in a different manner.

“How to Face Transformation Successfully” was the name of the panel moderated by **Rosa Montesinos, Director of Solutions Consultancy for AspenTech**, which gathered a group of experts to discuss topics such as decarbonization, digitalization, asset management, cybersecurity and human capital.



Rosa Montesinos, Director of Solutions Consultancy for AspenTech



Montesinos opened the panel by referring to the results of a survey carried out previously among attendees. One of the questions was: What is your company's priority regarding digital transformation? 42% of respondents answered: production optimization "We are obviously in a sector that wants to produce more. We have a great sustainability challenge, but also demand of energy", the moderator remarked.

The second question was: How prepared is your organization to face and surf the digital wave? The result was a dead heat between "prepared" and "little prepared". "Only 15% feel very prepared", the executive from AspenTech added.

Actually, so far, the strategic value of the digital to the oil and gas industry has been proven. According to **McKinsey partner Rafael Espinoza**, around 70% of the digital-generated value in organizations lies in advanced analytics. This strategic value has been generated, for instance, in the production optimization, predictive maintenance and drilling areas. "Today, the digital is no longer questioned", Espinoza said.

In line with this, the progress of digitalization has allowed companies to move from the pilot testing phase and scaling their usage with clear success factors, to saying: the discussion on value is

no longer focused on the possibility to increase production, but on having a return on investment from such incremental production. Additionally, we have managed to implement solutions is specific process points, which has also led to integrating decision-making around a business goal.

"The digital allows for a different way to work. We are going to start migrating from digital projects to a digital operating model, which does not necessarily mean technology or processes. It means agile, multi-disciplinary teams working around workflows that solve a core business problem", remarked the McKinsey partner.



Rafael Espinoza, McKinsey partner

"The digital allows for a different way to work. We are going to start migrating from digital projects to a digital operating model."

**Rafael Espinoza** | McKinsey partner

**Pablo Bárcena, Science, Technology and Innovation Strategy Manager for Ecopetrol** says that the digitalization topic has been around for about five years, but that a more integrated technology and innovation model is needed nowadays. “Understanding this topic does not translate into a digital or technology project. Actually, it involves several ecosystems, several industries working for a common good. It has elements from the technological development and from a different innovation model. We must see it as a whole”, he claimed.



Pablo Bárcena, Science, Technology and Innovation Strategy Manager for Ecopetrol

**Patricio Whitney, Vice-President of Americas Digitalization & Integration for SLB** agrees that the digital requires a multi-disciplinary dedicated team. They will be the evangelizers within the company”, he explained.

In this context, Whitney considers that the key to the roadmap set for the digital lies in focusing on how to complement the corporate strategy and help escalate to meet these corporate goals as soon as possible.



Patricio Whitney, Vice-President of Americas Digitalization & Integration for SLB





But which are the key factors to succeed in a digitalization program? Rafael Espinoza mentions six decisive premises: among them, the digital transformation must be led from top to bottom and with a strategic command. The business and technology area must work together. The best company resources must be assigned to succeed. They must be able to fail fast, learn fast and be agile. Also, the company must have professionals that leverage the digital ecosystem beyond its borders. And finally, they must focus on value rather than on discussing which platform to use.

A core element in the digital transformation is linked to cybersecurity. **Jeimy Cano, an international freelance Cybersecurity Consultant**, mentions that what matters is to clearly know the risks you take, and to make decisions based on that. For example, when you upload data to the cloud, you will clearly gain efficiency and lower your costs, but you must also know for sure that you will lose control of your data.

This is why Cano speaks about the company having “appetite for risk” because risks are taken whenever a digital project appears. “If there’s anything inherent to the digital context is that it is uncertain”, he remarked.

A second important element, according to the expert, is surveillance and follow-up of cyber risks. He adds that companies should have a cyber risk board.



Jeimy Cano, international freelance Cybersecurity Consultant



Sebastián Carmona, Vice-President & CTO at Honeywell

How fast will the digital transformation be in the industry? “Energy transformations usually take decades. We will not stop consuming oil or gas for the next 20 years. Getting out of poverty, developing other technologies and generating the capital to be reinvested in other technologies require the machine to keep on working”, explained **Sebastián Carmona, Vice-President & CTO for Honeywell**, during the round table on “Digital Transformation, Reconfiguring the Industry and Society” chaired by **Tiphaine Le Moënner, Project Manager of ARPEL**.

“Energy transformations usually take decades. We will not stop consuming oil or gas for the next 20 years. Getting out of poverty, developing other technologies and generating the capital to be reinvested in other technologies require the machine to keep on working.”

**Sebastián Carmona** | Vice-President & CTO at Honeywell





# 6

## The commitment and challenges of companies in the face of this new reality

Eleven CEOs from major companies in the region gathered to answer a question: How are companies transforming themselves in this new reality?

At the closing of the ARPEL 2022 Conference, the main executives contributed with their vision on the current situation of the industry and the need to take action in three high-level panels moderated by **Angela Grossheim, Executive Director of SNMPE**, **Pedro Miras, President of the World Petroleum Council (WPC)** and **Carlos Garibaldi, Executive Secretary of ARPEL**.



## The peruvian perspective

The first panel focused specifically on the Peruvian reality and its efforts in terms of energy transition, energy security and reduction of greenhouse gas emissions.

**Reynaldo Llosa Martino, CEO of UNNA**, was the first to take the floor to present a critical view on the requirements that the region and the sector are facing in order to satisfy the decarbonization demand. “In developed countries, this development was achieved by carbonizing. Countries like us, developing countries, have a long way to go to increase our GDP per capita, and that will require some carbonization along the way,” he said.

In this sense, Llosa Martino said that oil producing companies need to redefine themselves as energy companies and, in the transition and transformation context, act ambidextrously. That is to say, continue to create value in the businesses they

operate and which will allow them to migrate to energy companies. “All this will involve allocating financial flows to projects that are increasingly environmentally friendly, cleaner and more sustainable, which are the expectations of our shareholders and investors, while also acting as good neighbors in the communities in which we operate,” he added.

What was said by UNNA’s CEO led **Maria Julia Aybar, Vice President and General Manager of Peru LNG**, to consider that the sector’s first challenge is to “clean up its face” and show itself as an industry that is part of this transition process, instead of a polluting industry that remains outside the process.

“We are considered to be outside the process when, in fact, we are part of it, an important part indeed. Somehow, the companies in the sector are already rated red or negative,” she added.

According to María Julia Aybar, this situation has a direct impact in areas such as attracting and retaining talent as well as in the relationship with social sectors or the search for investment, because the perception of the industry is that it “causes damage or pollutes”.

“Someone brilliant in some garage, somewhere in the world, is figuring out how to leverage and create value in this scenario. We run the risk of disappearing if we don’t transform ourselves.”

**Reynaldo Llosa Martino** | CEO of UNNA.



Angela Grossheim, Executive Director of SNMPE



Reynaldo Llosa Martino, CEO of UNNA



Maria Julia Aybar, Vice President and General Manager of Peru LNG and Tomás Delgado, CEO of TGP



However, the energy transition will not be possible without the participation of the sector, especially gas, because, according to **Tomás Delgado, CEO of TGP**, it is the energy that generates reliability. “The energy transition is based on currently intermittent energies. And how do you deal with intermittency? Reliability is gas,” he said.

Consequently, Delgado considers that the challenge is for states and regulators to assume that reliability is neither “magic” nor “free”. Reliability is provided by investments in pipelines, storage, etc.”, he added.

The moderator of the panel, Angela Grossheim, was in charge of leading the conversation to the more specific: the experience of companies in terms of energy transition.



Andrés Mendizábal, CEO of COGA

As a way of example, Reynaldo Llosa Martino spoke about the investments made by UNNA in Piura for gas distribution, which will supply 90,000 homes, thus transforming their quality of life and changing an energy matrix that, in many cases, was based on the use of firewood.

And regarding the composition of the Peruvian energy matrix, UNNA's CEO said that “we are not always aware of how it has evolved. 40% of our electricity is generated by hydroelectric plants; another 40% probably by gas; and of what is left (20%), possibly half is renewable. And when talking about transportation, today more LPG than gasoline is consumed in Peru. It is very interesting”, he pointed out.

**Andrés Mendizábal, CEO of COGA**, valued the work done by the company in relation to the greenhouse gas emission reduction, a task that began in 2015 with the first measurement of emissions and managed to reduce 25% of the emissions in its system by 2021.

“We are talking about approximately 100,000 tons of carbon dioxide over a six-year period. However, continuing to reduce emissions to exceed 30%, or more, will require incentives. And here the call is for governments, to generate regulations in order to look for incentives which facilitate the process for companies,” he said.

A central point within the conversation of the first CEO panel was the degree of penetration of natural gas in the Peruvian market and the infrastructure of the country.

Tomás Delgado said he was surprised by the low penetration of this energy source. “Sometimes we forget that every day we produce 300 million cubic feet of gas that are not in demand, and that unfortunately we have to reinject them again because there are no people who want them,” he said.

The executive described the situation by stating that his country has the conditions and infrastructure to host a petrochemical project at a price that could be half of the price paid in the United States or other parts of the world. “Of course, these projects need stability and clear rules”, he emphasized.

Maria Julia Aybar questioned: “Why is it not working? Why is this natural gas not effectively reaching families, users and the market to stop importing fuel that is more polluting and obviously much more expensive? I believe that there is a part of the role of the State that is missing in order to advance in this process”, she said.

“Here we need the commitment of everyone,” said Andrés Mendizábal, CEO of COGA, both investors, employees and also governments to encourage the sector and not slow down its progress.

“We have to visualize what kind of country we want to have in 20 years. And that clearly requires a very strong investment in infrastructure on the part of the private and public sectors. We cannot accept being eternally without pipelines and wanting to take gas by trucks to the main cities of the country”, said Tomás Delgado.

With a comprehensive approach, Reynaldo Llosa recalled that the energy transition brings challenges and opportunities, for which companies in the sector have the advantage of having financial backing, processes, talent and management systems that, if focused, prioritizing, allocating resources and strategy, can create value in the next cycle of energy generation.

On the other hand, Llosa said that it must be understood that the new scenario is highly competitive, with new players and new business models. “Someone brilliant in some garage, somewhere in the world, is thinking about how to take advantage and create value in this scenario. We run the risk of disappearing if we don’t transform ourselves,” he concluded.

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## Companies and their moment

In the second panel of the closing day of the ARPEL 2022 Conference, the moderator, **Pedro Miras, President of the World Petroleum Council**, established five thematic axes for the CEOs’ reflection: impact of the geopolitical conjuncture on the energy transition, financing, talent retention, digitalization and industry regulation.

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### Transition and context

Miras introduced the conversation with three elements to analyze: pandemic, war in Ukraine and international crude oil prices above \$100 a barrel. In less than three years, these three factors changed the eminently pro-energy transition approach to focus the debate around energy security as a priority for countries.

“Do you think this will affect the famous energy transition and what we were thinking no more than three years ago?” said the moderator.



Pedro Miras, President of the World Petroleum Council and Alejandro Stipanovic, President of Uruguay’s ANCAP



**Alejandro Stipanivic, President of Uruguay's ANCAP**, picked up on the concern and responded by saying that, without a doubt, the scenario brings the energy trilemma back into the sectoral conversation. What is more, the reality shows that there are one billion people who do not have access to energy, which translates into a debt for the energy sector and society. "The problem is that the discussion in the world is not complete, it does not have all the arguments and is often biased," he said.

For **Vernon Paltoo, CEO of National Energy of T&T**, until a few years ago the focus was mainly on renewable energies. Today, on the other hand, it is going down two parallel paths so as not to discard what has worked for the industry for decades and to continue producing, but with the premise of lower carbon emissions.

"Energy security is critical for the region and what the pandemic has taught us is that food security goes hand in hand with energy security. As countries, we should see food security and energy security as complementary in terms of our strategy and policy development and from a regional perspective," he added.

**Jorge Vugdelija, CEO of OCP of Ecuador**, agreed that the war between Russia and Ukraine brought the issue of energy security, which already seemed to have been overcome, to the forefront, and therefore the industry learned that long-term decisions cannot be made with short-term price signals. "This situation does not change the future of the industry. There will certainly be delays with respect to some of the goals set, but, finally, society has defined what it wants in the long term," he said.

"This situation does not change the future of the industry. There will certainly be delays with respect to some of the objectives set, but, finally, society has defined what it wants in the long term".

**Jorge Vugdelija** | CEO of OCP of Ecuador



Vernon Paltoo, CEO of National Energy of T&T



Jorge Vugdelija, CEO of OCP of Ecuador

## Financial resources

Financing for the sector's projects was the second topic of reflection in CEO Panel 2. "I was reading an article from an OECD report that pointed out that financing based on ESG criteria in 2019 was one trillion dollars (Anglo-Saxon nomenclature), and that by 2025 they were talking about 25 trillion. It seems that the demands are going to be very strong along these lines. This is a fact that caught my attention", said Pedro Miras.

With the challenge of becoming increasingly environmentally and socially friendly and having adequate corporate governance, the possibility of direct financing reaching a sector marked by pollution is becoming an uphill struggle. "There are many sectors that see a slowdown in the availability or ease of finding credit, which, in my opinion, can structurally take us in the wrong direction," said Alejandro Stipanivic.

“Big capital is wary of what we were talking about earlier, the social license and the condemnation of the Oil and Gas sector”.

**Alejandro Stipanovic** | President of ANCAP.

The President of ANCAP said that, although Uruguay is a country with a very low investment risk and ANCAP, being a state-owned company, has sovereign risk with fluid and accessible access to credit, taking on debt to leverage a company is very different from financing a specific project.

He recalled that, in the past, he was visited by entities interested in financing projects, but that they

backed out when the proposed project was, for example, the decarbonization of refining. “There is no money for that because the big capitals are wary of what we were talking about earlier, the social license and the bad reputation of the Oil and Gas sector”, he said, to which Pedro Miras added: “in Europe, the requirements for financing projects based on ESG criteria are an ever-increasing demand”.

## In search of talent

The third topic on the agenda was the attraction and retention of talent, understood as one of the most valuable assets of companies and of the sector. The experience of Trinidad and Tobago’s National Energy Corporation shows that the time has come to redesign the education system towards a low-carbon energy industry. “And so, we have taken steps to work along with the Ministry of Education, with the universities, with the high schools, in terms of an adjustment in the curriculum towards less carbon and environmentally conscious technology,” said Vernon Paltoo.

The entry of new talent is challenging for those who have been in the sector for decades. This was stated by **Horacio Marín, President of Exploration and Production of Tecpetrol**, who said that the

insertion of young professionals with a different vision demanded a deep cultural change in the organization, especially because the sector must compete for the attraction of talent with companies such as Google or Mercado Libre, to mention a few examples.

Stipanovic said that: “If we make a personnel selection for a green hydrogen project, professionals come pouring in. If we make a selection of personnel for our biogenic carbon capture project in the ethanol plant, they also come in droves, but if we call for engineers for the refinery, how many apply?”, he emphasized.



Horacio Marín, President of Exploration and Production of Tecpetrol



## Digital era

The pandemic has led to teleworking becoming part of companies' work routines. And while it provided an opportunity for companies to continue to operate remotely, its greatest value lies in the increased awareness that digital is more important to produce more sustainably. "How are your companies doing in the application of digitalization and new technologies?" asked Miras.

"In our case, the stockholders of the organization are people who come from three generations, so technology is key. We are always fully digitalizing everything. For example, industrialization without digitalization is just impossible," explained Horacio Marin.

In this sense, the Argentine executive said that Tecpetrol is undertaking an absolutely disruptive

project with people who work at Disney, by means of which his company will be able to measure automatically how long each activity takes without any tablet or cell phone.

Jorge Vugdelija indicated that OCP Ecuador took digitalization to the Core Business of the organization, working intensively with artificial intelligence. "We implemented a system that predicts failures based on learning from databases of previous episodes. This allows us to stretch maintenance. We have achieved very significant savings in maintenance layers with the use of technology," he said.

In the case of ANCAP, Stipanovic said that the most challenging, risky and important project in terms of processes is the migration of its SAP to the cloud. The project launched in 2021 and will extend for six years with an approximate investment of USD 30 million.

In essence, what the pandemic did was to create an environment that allows for more focused investment in technology, Vernon Paltoo concluded by way of reflection.



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## Messaging, media and networks

A recurring concern during the ARPEL 2022 Conference was the need for better communications, for the industry to have a voice and a narrative in the debate on sustainability and climate change, for instance.

Within this framework, the CEOs of Panel 2 agreed that we are living in different times, both in terms of stakeholder expectations, messages, media and audiences.

“Communication is important, but we have to define first how we stand to face the changes proposed by society”, reflected Jorge Vugdელიja.

On the other hand, the CEO of ANCAP said that by 2022 communication will be based on 280 instant Twitter characters. “Everyone is a chronicler of

reality, journalism is hacked. Companies, especially those in our sector, have to fight disinformation with data,” he said.

Vernon Paltoo also acknowledged that communication has become a critical issue and that it has also changed the way we communicate. Those who influenced society’s thinking and decisions did not adopt the traditional forms of communication such as television, radio, press.

“That is why we advanced in our communication strategy towards a younger demographic, through social networks, to the point that it is now our main way to convey our message because we have understood that the younger generation is the most influential,” he added.

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## Regulation

At the end of the panel, Miras asked senior executives about the role that regulation should play in the sector. With little time left, the one who dared to give a criterion was Alejandro Stipanovic. “We have to change the concept that regulation is an oversight, because regulation has to be a motivator of behavior and that is an important message for Policy Makers”, he said, to which Miras concluded by saying “We have to demand from our Policy Makers that their regulation be stable, predictable and easy to understand”.

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## The caribbean on stage

The third and last CEO Panel was moderated by **Carlos Garibaldi, Executive Secretary of ARPEL**, with a special characteristic, it was the space for countries that are part of the Anglo-Dutch Caribbean basin and culture to have the opportunity to analyze and evaluate the performance of their national oil and gas companies.

As background, the moderator said that the CEOs represented companies with an important specific

weight in the economies of their countries and in the generation of jobs, with the permanent requirement to supply energy to the population at affordable prices, strong political exposure and a series of restrictions.

“How do you balance, in your companies, the aspirations towards energy transition with the mandate to monetize your reserves and resources?” asked Garibaldi.







Arlene Chow, CEO of Heritage Petroleum

“Someone mentioned that 80% of the emissions came from 20% of the countries and we are not those countries.”

**Arlene Chow** | CEO de Heritage Petroleum.

**Arlene Chow, CEO of Heritage Petroleum**, a Trinidad and Tobago-based company, said her country, which is small (5,000 km<sup>2</sup>) and which would fit 250 times the size of Peru, has fallen prey to climate change with palpable effects in coastal erosion, flooding, hurricanes and so on.

This situation questions the role of an oil extractive industry in sustaining the national economy. However, the executive said it is absolutely critical for her country to produce oil and monetize it because, essentially, it has between 150 and 200 million barrels of proven oil reserves that must be produced. “It’s difficult, but it’s absolutely necessary for a small developing country like ours. I know someone used the term responsible profitability, and that’s what I think,” she said.

On the other hand, **Annand Jagesar, CEO of Staatsolie of Suriname**, said that: “We are in the oil business and we have to produce oil, because that is what the country is looking for.”



Annand Jagesar, CEO of Staatsolie of Suriname



Mark Loquan, CEO of NGC

However, like many companies in the sector, Staatsolie is working to reduce polluting emissions, particularly methane leaks in its system, because “we want to be responsible,” Jagesar said.

For **Mark Loquan, CEO of NGC**, one of the big gas challenges in Trinidad and Tobago is to continue producing 1 TCF, but with an eye on 2050 and the energy transition to a low-carbon scenario. “We have to stay very focused on near-term gas supply issues,” he emphasized.

Carlos Garibaldi introduced another topic for analysis, the transformation of oil companies into energy companies, which also generates a series of questions because selling “electrons instead of molecules” places companies of the sector in a much more regulated type of business with lower profitability margins.

“The government’s mandate for my company is to remain a national oil company and not an energy company. We have to consider, of course, the impact we have on the environment and we are trying to balance that,” said Arlene Chow.

Mark Loquan added that it is an ongoing struggle to think about gas supply while thinking about how to use less fossil fuels, while also trying to be more efficient by reducing methane leakage. Today, that goal has led his company to adopt the OGMP protocol and even more ambitious targets to achieve significant emission reductions by 2025.

On the other hand, the most recent discoveries in the Guyana-Suriname basin, considered a world success story in terms of hydrocarbon exploration, and which could add up to 50 TCFs of reserves, allowed Annand Jagesar to talk about the opportunities that this opens up for his country, which depends 50% on its budget on oil and gas production.

With the new discoveries and the possibility of monetizing them, it is a fact that Suriname will experience a boom period. “Being a former Dutch colony, how will they avoid Dutch disease,” Garibaldi asked.

Annand Jagesar was blunt in saying that it will be inevitable, so the money coming into his country’s economy must be properly managed. He felt that the Sovereign Stability and Welfare Fund may be a good mechanism to not inject all the money immediately into society.

In the final part of the panel, Garibaldi asked the panelists a complex question: Do you think it is fair for the countries that have created the most emissions, and are fully developed, to tell developing countries not to develop their resources because of the energy transition and to avoid climate change?

Mark Loquan said “no,” because “Every country is individual and has to come up with the right combination of energy resources that best work for each. And I think it’s not about the exclusion of one versus the other (fossil versus renewables),” he added.



Arlene Chow was blunter: “Absolutely not. Someone mentioned that 80% of the emissions came from 20% of the countries and that is not us,” she said. She agreed with Loquan that each country has its own reality and no one should say what should be done, because they do not understand the reality of a developing country.

Finally, Annand Jagesar said that it is necessary to sit at the table to discuss the issue, and that the developed world should be the one to take the initiative. “The developed world pledged a lot of money to the developing world, I think it was \$150 billion just to address climate change, so this discussion will be difficult,” he concluded.



# 7

## The future of refining and downstream in Latin America and the Caribbean

“Refining will go on. The configuration must go beyond the traditional and offer new products with greater added value,” said **Carlos Garibaldi, Executive Secretary of ARPEL**, in his evaluation message to the full audience at the closing of the ARPEL 2022 Conference.

What Garibaldi said was reflected in the panel called “The future of refining and downstream in Latin America and the Caribbean”. “Today, we face the big challenge of making the most of that transition,” said **Alejandro Vago, Refining Director at Raízen**. “When I say the most, it means that we have to use our infrastructure, our logistics, our opportunities and synergies,” he stated by putting forward a global vision.

**Fabián Lombardi, Downstream Technical Manager of PAE/Axion**, considered that we are going to see a bonanza period for fossil hydrocarbons for another decade and a half in the countries of the region. “If we look at the product import map of our region, Latin America is clearly a gasoline importer with individual characteristics in each country, based both on the structure and on whether or not they are crude oil producers,” he pointed out.



Alejandro Vago, Refining Director at Raízen

The shift to a low-carbon, less polluting fuel market means that it will impact first and foremost on the margin at the international level, and the region will develop more slowly than industrialized countries.

No one could have predicted the last three years. Pandemic, price volatility, the war in Ukraine and the subsequent supply risk, very high margins and a global imbalance that the world was not used to.

“Right now, both the security and the importance of supply have been something much more noticeable than before,” analyzed **Claudia Kalamar, Refining Manager at ANCAP**, the Uruguayan state-owned company. “So, the role of refining in the region and the world is still very important for energy assurance,” she emphasized.

**Gustavo Chaab, Executive Refining Manager of YPF**, considered that, like any transition, it will have many temporary elements that must be taken into account. First, the impact of light vehicles may be very large, initially in Europe and developed countries.

In that sense, “we will need to adapt in order to produce less gasoline and more gas, diesel or middle distillates.” He considered this fact as “a great challenge”.

Chaab also states that another element of the transition will be the license to operate. This aspect is explained in the new standards that will govern the industry from a ‘decarbonizing’ vision, in which the activities, from exploration to commercialization, are measured by the carbon footprint.

“The role of refining in the region and the world is still very important for energy assurance”

**Claudia Kalamar** | Gerente de Refinación de ANCAP.



Fabián Lombardi, Downstream Technical Manager of PAE/Axion



Claudia Kalamar, Refining Manager at ANCAP

“We will need to make a great effort for decarbonization, because we are going to have incentives such as avoiding the ‘carbon tax’ -pollution taxes- and we are also going to have to avoid non-tariff barriers that are going to arise both to sell the product and to obtain financing,” he said.

The consensus in the global industry seems to be clear: a new era in energy production is coming, focusing on the environment and processes that allow production with as little pollution as possible. However, this transition entails not only migrating to



Gustavo Chaab, Executive Refining Manager of YPF



new non-polluting sources, but also ensuring that the production of fossil fuels is as environmentally friendly as possible.

According to **Walter Cánova, Vice-President of Refining and Industrial Processes at Ecopetrol**, although “the energy transition is a reality”, it is necessary to create the conditions for a “responsible energy transition” that would otherwise generate “global chaos”.

“A responsible energy transition is crucial and it will take time,” he said, looking at the challenges for Colombia, home to Ecopetrol, where demand is expected to peak as early as 2045 and where replacement to new sources such as electricity or hydrogen for the automotive sector will occur, but will take time.

“We not only have to prepare our refineries for that.

We have to diversify our portfolio and get ready for that future. Even when that future is not going to be tomorrow or in a decade, we must start learning today,” he said.

“A responsible energy transition is crucial and it will take time”

**Walter Cánova** | Vice-President of Refining and Industrial Processes, Ecopetrol.



Walter Cánova, Vice-President of Refining and Industrial Processes at Ecopetrol

## Time and adaptation

The changes to have a cleaner industry that is useful for the next decades and that, at the same time, allows a responsible energy transition, must be made in the current infrastructure of refineries and hydrocarbon processing facilities.

However, investments take time and are at the mercy of companies’ commercial priorities. In this context, **Daniel Monzón, Partner at Arthur D. Little**, moderator of the panel, gave way to a second round of responses from

the speakers and asked if there is a window of time to make the investment needed by the industry.

Alejandro Vago, Director of Refining at Raízen, said that the current reality of refining infrastructure in the region, most of which was built in the 1960s, should define the investments to be made in the near future.

So, what to do still seems a question without definitive answers. “If I replace equal for equal

by putting in more technology, more efficiency. But I say, it basically remains the same. Second, I significantly change the course, and if I significantly change the course thinking about products or thinking about this future transition conversion. In refining there are units that, we know, will be able to better adapt to this transition scheme, for example, to be able to process cargoes that are not strictly derived from crude oil”, exemplified Vago.

Regarding timing, he considers that the answer is different for each refinery and infrastructure. "It is very timely for Latin America to carry out a good evaluation of the investment decisions to be made, even with a 30-year future ahead. Our decisions have to be made with a view on the transition," he said.

Gustavo Chaab, from YPF, indicated that there will be very difficult decisions to make because the oil sector, and therefore refining, will remain for a long time and in order to continue, several things must be done at the same time: On the one hand, investments in fuel quality, keeping the flow of investments in risk control, process safety, integrity, reliability, etc. And, at the same time, investments in low carbon and efficiency schemes.

However, this requires investment in technology and digitalization, none of which is free, stated Chaab, while trying to maintain margins (profits).



Daniel Monzón, Partner at Arthur D. Little

All challenges running at the same time. "We will need to invest to keep at bay or reduce our OPEX and defend our margin," the executive remarked.

"The transition is a reality and we have to do something in an environment with eroded margins going forward," added Fabián Lombardi, from PAE/Axion, while digging into the opportunities that the industry has, among which is also the classic opportunity to invest "in what we know how to do, let's improve energy efficiency."

"We are the refiners, I believe that the main advantage is that we have the technological know-how, the human resources with knowledge, trained and working with formal processes", he emphasized.

In this framework, says Lombardi, an actor has to be with all the players around the table, when referring to the presence of governments in

the expansion of clean energy without whose incentives and investments the results will be slower. He said, "Of government policies that help make these investments possible, to make the transition a reality and to make it possible in a responsible manner".

Walter Cánova, from Ecopetrol, focused on the fact that the oil industry still has several decades of life in which "we have to maintain our business" by making environmental concerns a way to produce better fuels.

Alejandro Vago pointed out that, within the framework of the role of refining and the great advances in efficiency achieved in the last decades, "we are part of this transition and we have the will to be part of it".

Some incontrovertible conclusive ideas are related to the validity of refining, its need to adapt and improve efficiency in the midst of an energy transition process.

Refining will go on. The configuration must go beyond the traditional, to incorporate new products, operate with even stricter premises related to the environment and embrace the changes that allow a responsible energy transition. "We refiners are going to be around for a long time and we can't leave before then," concluded Gustavo Chaab of YPF.

"We refiners are going to continue for a long time and we cannot leave before"

**Gustavo Chaab** | Executive Refining Manager of YPF



## A new era for the downstream in Peru

### Talara Refinery

At the beginning of the last century, the first crude oil refinery was set up in Talara, a coastal province in the department of Piura, Peru. The desert and the sea of Talara hold deposits that the ancient Peruvians called “copé”, a kind of pitch that was highly appreciated by the Spaniards who conquered Tahuantinsuyo. In the 20th century, this wealth made this city become one of the most important centers of industrial oil exploitation in Peru.

With this history of more than 100 years, with a refining scheme of medium conversion, typical of the seventies, which, despite being managed very efficiently, requires increasing its capacity and complexity to improve its economy and achieve the production of clean fuels with lower sulfur content. The current refining capacity amounts to 65 thousand barrels per day (MBD).

The Talara Refinery produces LPG gas, motor gasoline, solvents, turbo A-1, diesel 2, industrial oils and export quality asphalts. This pioneer refinery is now in the final stage of its expansion and modernization.

The ARPEL 2022 Conference was attended by **Oscar Vera, Corporate Manager of the Talara Refinery**, who explained the project, its development and prospects.

“The fundamental thing in the operation of a refinery is that it is profitable and that it fulfills the mission or what the world regulations state. In Peru we

are also in that line”, began Vera. And in line with all the forecasts that oil and its derivatives will still have several decades of life in the industry and transportation, building a refinery is also an act of responsibility with those perspectives.

The previous refinery had 65,000 barrels of capacity. “The new one has 95,000, to obtain low sulfur content products,” the speaker explained.

The infrastructure also has a catalytic reforming unit to raise the octane rating of gasoline and treatment units to remove sulfur from the different streams.



Oscar Vera, Corporate Manager of the Talara Refinery



In detail, Talara has production targets of 5,100 barrels of LPG, 23,300 barrels of gasoline, 6,000 barrels of Turbo A and 44,300 barrels of diesel.

Regarding the technological innovations implemented, according to Vera, the new Talara refinery has implemented at least five important aspects; High purity hydrogen, Flexigas treatment, Hydrogen compressor,

Processing flexibility in PHP and Flexigas harnessing, Hydrodesulfurization reactor in HTD, Increase in cetane number, Plate exchanger in RCA, Increase in octane rating in gasoline in RCA, Impact on gasoline octane rating at HTF, Control of bottoms level at FCC and FCK, Heavy residue processing, Hydrogen sulfide (H<sub>2</sub>S) detectors, Control of catalyst emissions at FCC, Sulfuric acid production and Machine monitoring system.



Felipe Pérez, Director Downstream Strategy Americas, S&P Global

















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